Pinkley F-5 (1963-1965)1962 MU31 Seri MU31

III

MAMMALS

water for a week until it escaped. There was no intent to do away with it and serve it up for dinner later on.

The 3 species reported as eaten in the past are kangaroo rat, sea lion and the ringtail cat or cácomistle. Of these the little rodent had been supposedly "boiled in hot water with salt" which method of preparation may indicate that it happens quite recently yet. It is quite possible that in times of famine this animal is still used. The sea lion has been reported as "eaten once a long time ago. All of it. But not now. Its hide was once sold also but now it isn't used at all." This conflicts with McGee's statement (McGee, 189:202) that there was a taboo on eating sea lions among the Seris and there is no way to reconcile the information.

McGee's report may be as truthful as are the uncertain and hazy comments of the present day Indians.

On the other hand, the cougar belongs to a very dubious category, unless we can rely on Miguel Barnett's memory. All 4 of the younger informants emphatically deny that the cougar has ever been hunted for meat. But Miguel Barnett claimed that this has been done in the past, although he could not tell how long ago. Kroeber says nothing about this animal and this makes it difficult to date the events. At the time of Kroeber's visit, Miguel was at least 25 years old and the cougar could have been hunted either then or earlier. But today the Seris do not eat the flesh of the big cat and their abhorrence of it has been confirmed by the Mexicans to whom I talked about the subject, and who relish cougars' meat. This apparent distaste for the *el tigre's* flesh may well be a recent development quite unconnected with the lack of weapons. McGee (1894: *loc. cit.*) casually mentions that the Seris hunt both cougars and the jaguars but cites no evidence for it. Yet in his time Seris' almost only weapons were the bow and arrow and 'a lance which today has been replaced by firearms. I am unable to explain this contradictory behaviour.

Finally, there is the Ringtail cat or cácomistle. Although this beast has been reported as part of the diet, the information isn't too reliable. I had no way of checking whether this was the animal the Indians had in mind. Their description of it seemed to answer some other unspecified animal and their answers were confused. The fact is that the Ringtail cat does occur in the Seri territory and they are surely familiar with it.

Of the remaining 11 species none were ever mentioned by any of the informants as having been ever eaten. Their denial of eating the coyotes were most vehement. Coyote figures out probably

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IV

BIRDS

136 Woodpecker—There are several species in the area but
128 Gila woodpecker (*Centurus uropygialis*)
is certainly one of them.
Hummingbird—Unspecified species, one of several occurring in the area according to Dr. Orr.

Economic Uses

262 Such use as had been made of the birds is largely in the form of an addition to the diet. Reading McGee, one gets the impression that the importance of the birds in the Seri diet, in contrast to the marine animals of all description, has declined greatly. We do know that in the past various birds and, most especially, the seagulls and the pelicans represented a significant item. But today out of the basic list of 24 species, only six has been reported as eaten and all, with an exception of the duck, in the past tense. The duck
*[825] evidently is the only bird which the Seri consider really fit to eat and yet, even here, there is temporary avoidance. Moreno told me that this bird "we eat only when we visit the island (Isla Patos).
[223] But we do not eat it in September because it is
[252] too lean. We like it in December when it is fat. We then kill it at night with stones. It is roasted."[1]

All other birds were reported as eaten only in the past and this has been expressed more or less as follows: sea-gull eaten a few years ago, cormorant 8-10 years ago, pelicans 30-35 years ago. This would mean that the pelicans had been discarded as food, at least according to the official Seri version, in the early twenties, before Kroeber's visit. But the Seri disclaimers on the subject
183 of the bird diet are not entirely correct and re-
262 flect less the total rejection and more only low esteem in which these birds are held. For I have seen myself the sea-gull and the pelican eaten on
●[261] few occasions when times were tough, and the food supply was non-existent, owing to the choppy
*[825] and windy seas. The Seris caught in the act of cooking the meagre flesh of the pelican or the seagull were obviously apologetic.

262 It is interesting that some of the birds present in the area, the quail or the woodpeckers, are not eaten although these birds figure prominently in the diet of some of the other groups. It may well be that the Seris consider them too small to bother.

[252] As far as I could find out, eggs of only two species of birds, the sea-gull and the heron, are collected, boiled and eaten. But the eggs of the

[1]His statement requires some explanation. There is no taboo on eating duck but the bird does not occur in Desemboque or any other place known to the Seris, with the exception of Isla Patos. Here these birds winter, arriving in September and arrive worn out and lean, to recoup the fat, a few months later. The Seri unfamiliarity with their eggs is another indication that the birds come to Isla Patos only for the winter.

[136]
*[825]

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VIII

CRUSTACEA

136

Scientific	Common Name
Cirripedia	Barnacle
Axius vivesi	Mud-shrimp
Leptodius occidentalis	
Microphyrus platicoma	
Speleophorus schmitti	
Petrolisthus armatus	
Callinectes arcuatus	
Glyptoxanthus meandricus	
Pilumnus townsendi	

* 825 All animals in this group are considered live animals—and not plants. This interestingly includes the barnacle. The only way one may account for this is probably the Seris' observation of the cracked barnacles and of the moving flesh inside. Barnacles growing on the marine turtles are also classed as animals, though of a different kind than the barnacles growing on rocks or on the mangroves. They are called *piojos de cahuama*, literally, turtle lice.

The Seris regard *Glyptoxanthus* and *Pilumnus* as the same kind of animal. *Pilumnus* is considered to be merely a large specimen and "maybe an adult," the other *Pilumnus* "is young." When questioned about the reason for the identity the informants pointed out the hairiness of both crabs.

On the other hand, although *Speleophorus* and *Microphyrus* have the same Seri name, they are considered two different species.

Economy

262 Crustaceans play little role in the Seri diet. Very few are eaten at all and when they are, the amounts are insignificant and they are considered an inferior sort of food. The informants denied that they have eaten any of them in recent years, but allowed that two species, *Callinectes* and *Axius*, had been part of their diet in the past, although how long ago they didn't specify. There is no doubt, however, that in time of frequent sub-famines, the Indians resort to these lowly creatures. [261]

* 825 In addition to this, *Microphyrus* had been mentioned as a fish bait. It is possible that in a pinch [226] other forms are also so used. Finally, the most frequent function that the crustaceans play in the [857] Seri life is as objects of play for the boys who [411] spear them with the miniature two-pronged "puieros."

Sexing

For three species of the crustaceans the Seris indicated distinction differences between the sexes. In the two crabs, *Callinectes* and *Leptodius*, the males have narrow center plate while the female's center plate is wide, which in fact is a well-known sex difference in crab. In *Glyptoxanthus* and *Lep-*

[P.43 A]

123 nets of twisted fiber, hooked the nets in the ends of the notched
312 stick and started off nine or ten miles to the water hole in the heart
[492] of the mountains.

Water carried so far over loose, sandy soil, dodging cactus, threading a devious way among the *talus* thrown off the cliffs and slopes of canyon walls, with the water-bearer barefoot, acquires a value absolutely unknown to the man who draws an unlimited supply from a faucet.

The two men were gone six hours and when they returned they were almost staggering under the heavy loads of water, each man carrying at least one hundred and ten pounds of water, as the cans were full. In addition, one man had a canteen full.

The thirsty people drank sparingly, and a little Seri maid poured some of the precious liquid into a cooking olla for a thirsty dog. After the dog had lapped sufficient to allay his thirst, she carefully poured the residue back into the can, never losing a drop. One drop of water could not be spared after that arduous trip.

484 Bob says a man goes to Hermosillo occasionally and returns to the
147 coast, ninety miles, with two to five cans of *mescal*. It takes probably
648 four days to do it, but it is a wonderful feat of endurance. He said about thirty years ago a woman walked the ninety miles during one night, afoot, and reported to the Government House when it was opened at nine in the morning that about fifty of her people had been shot by Roberto's uncle at various times. This uncle was a very hard rough man and the Seris were fond of his mares and steers for meat, and used to steal, so he began shooting a goodly number. Fearing a man messenger would be shot, as men were frequently shot while going along the road, they sent a woman.

Ysabel was Governor at the time. Judgment was rendered against the uncle, and it is probable that a hanging squad would have been sent out to execute him. The Governor, a great friend of the family, sent for him, and he rode ninety miles at night on horseback and was saved with the Governor's help.

Roberto saw twelve Seris pack meat from two mares, two steers and two yearling heifers, for four or five miles to their boats. Their endurance and strength is phenomenal. The question naturally arises, "Why are not burros used by the Seris on the Island to ride and pack,
[492] as they are by their Mexican neighbors on the mainland?" It has been tried, but things were reversed; the Seris packed the burros around in their stomachs.

261 Roberto said: "These people, living on the verge of starvation,
262 never having a continuous food supply, would kill and eat every burro, and it is a common thing on the mainland, if a cow or horse dies, and Seris are in the neighborhood, they will try to beat the buzzards to it. They will gorge in times of plenty, and when food is scarce they

[text continues on p. 160]

261 will exist on very small rations, bear burdens, and walk long dis-
262 tances. Their food is anything that walks, flies, crawls or swims,
[252] and they eat it raw with the same relish that we eat it cooked. There is but one thing they will not eat; they draw the line on the Gila monster. They are the most perfect type of human being adapted to desert conditions that exists today. Convey them blindfolded many miles into the heart of the desert, empty-handed, remove their blinders, and they will find both food and water where others would perish. The Papagos and Yaquis do almost as well."

302 We gave the women a small bag of flour and three or four cubes of
[123] sugar around, and the men three packets of tobacco each and two boxes of matches. Matches with them are very precious and are rarely used. Rather than use a match a woman came over to our fire and borrowed some coals to rebuild her fire. From this point the nearest matches are a good deal over one hundred and twenty miles distant, so they have to economize in every thing.

422 Each rag is valuable, and flour, sugar, coffee and rifle shells
[436] are absolutely priceless. While they know money, it has no value here.
[437] Only commodities go here. The most highly prized things are boards to
[389] make boats and rifle shells to get game and protect themselves. All empty shells are saved, the primer punched out, straightened, a match head put in, a little pinch of powder on top, the shell filled up, a long bullet inserted, the shell pinched tight, and a fresh set of ammunition is made.

142 The women and children certainly did look wild. Their hair was
291 frowsy and unkempt, their skirts and waists a patchwork of dirty rags
302 coming just below the knees; their features seamed and hard and cruel. Their complexion was very dark. They had no under garments. The children wore only a dirty shirt coming a little below their thighs, and even that is ragged. One or two of the women had a dirty bandanna over their heads. How I wished I could have seen them in their ancient, picturesque pelican-skin kilts!

302 I happened to witness the operation of a Seri beauty parlor. A
[024] mother brushed the hair of her thirteen-year-old daughter with a brush
[283] made from the fibrous roots of a certain grass tied together with
[515] sinew. During the operation if she came across a *piojo*, and she found several, she plucked him away from his feeding ground and dropped him in the fire.

The hair neatly brushed, the mother then mixed paint in a small vessel and with a tiny stick painted a bright blue design under the eyes and across the cheeks and nose, and then she added narrow white stripes, which, contrasting with the blue and the dark skin, produced a very striking effect. This paint is easily removed and the women often paint and remove three different face designs in one day.

304 I did not see tattoo work on either men or women, nor did they
301 wear ceremonial feathers as did our western Indians.

123 the flesh attached. This we roasted, or broiled, by standing it on
262 edge against two stakes in front of the fire. The breast was white and tender, somewhat like roast pig, but much more delicious.

262 The Seris cut off the great flippers, dug out the entrails, and
252 whenever there was a crack in the crowd of men, women and children, there was a dog lapping the blood and chewing a shred of meat before being driven off. Men, women and children tore off pieces of the tender
[251] meat and ate it raw. The blood which gathered in the hollow of the shell was baled out and saved in an olla.

A woman took out the coils of entrails, ripped them open with her finger, squeezed out the half-digested sea grass, which resembled closely-packed boiled greens, and rinsed them in the sea. The head
[251] was skillfully disjointed, and with flippers, entrails and liver, put up on the brush roof away from the sand and dogs.

Then began the feast; half the turtle being devoured immediately.
[264] To see Blanco, which name fits neither his complexion or character, gnaw the bone and tear away the raw flesh of a turtle flipper with his strong white teeth and cruel mouth, would not require much imagination to substitute the shin bone of a human being.

All parts of the sea turtle are utilized except the bones and portions of the head. The white, flexible under-shell is roasted and eaten, but how they can masticate and digest it is a mystery. I tried it and gave it up, as did all our party. It might have been a Goodyear tire, for all the impression we made on it, but even the Seri children
237 eat it. The carapace is broken into small pieces and dried out in an olla, and this yields a green oil. The shell is nearly one-half inch thick and filled with minute cells which carry oil. This oil is evidently a provision of nature to prevent barnacles and marine growths from attaching to the shell. This oil is poured into a previously cleaned section of intestine, fastened at one end, and then is bottled, ready for transportation or use.

The skin of the flippers is used for sandals. The broken pieces of carapace are also used for firing ollas. The shells are used for windbreaks, for receptacles for transporting household things on women's heads, and possibly for other needs. The stomachs are stretched, probably with sand, and when dried are used for transporting water, the same as we use a canteen.

185 The Seris are always improvident. They raise no cattle. They plant
261 nothing and the only crops they raise are children and dogs. They store no food away, eat when there is plenty, go hungry when there is
[241] nothing to eat. When they will eat raw turtle meat like animals, their
[234] taste is not refined. This is evidenced when they will eat a horse or
[262] burro dead, several days---scrape off the maggots to get a chance at it.

123 the same as do children and dogs, even though it may be hauled for
[132] six or eight miles on mule-back.
[137]

With gifts and hand-shaking all around, we bade goodbye to Lupe and the children and started on our way.

After leaving San Carlos we travelled through a cholla and giant cactus country until we reached Roberto's ranch at Santa Cruz. We had picked up Pancho Oliverria at San Carlos.

Just before leaving the ranch several men lifted a poor woe-begone mare to her feet. She was so poor and weak she could not get up by herself, but once up she managed to stand and finally staggered out into the *mesquital*, the place of mesquite. One eye was missing and watery matter was oozing out and running down her cheek. A night or two before, a lion caught and destroyed her colt, and probably in an effort to protect it the mare came too near the scene and the lion tore out her eye with one sweep of its paw.

Midway to Santa Cruz we stopped a moment at Blevens ranch *Costa Rica*. Blevens is a large, florid white-haired American who has lived in this country for fifteen or twenty years and hasn't much use for the Seris as they have killed so much of his stock.

• [24] At one time he noticed a dead cow which was all swelled up and badly spoiled. No white man could stand the smell. He told some Seris about it, and they flocked around it, and when they had finished all that was left were the hoofs and horns.

Nene's wife cooked dinner for us at their house which was composed of *carrizos* and mud roofed with earth, all supported by mesquite logs. Surrounding it was a hog tight mesquite fence, and in this corral was a fifty-foot deep well which furnished the water supply. Half a bull's hide laced on to an iron hoop and holding about fifteen or twenty gallons, was the water bucket. This was hauled up by a long rawhide rope passing through an over-head block drawn by a mule.

After leaving Santa Cruz with none added to our crew, we wended our way through a maze of mesquite, cottonwood and other timber, gradually working out of the timber to more open country where traveling was not so strenuous. The steering gear was worn so that the old truck would often head for a saguaro or mesquite and stop just short of being smashed.

At last we reached a region of flat baked lake-beds, covered in flood times. Sometimes we could travel fast at fifteen miles and then again we would go in the low where it was soft. About three miles from our destination we took off half our load and piled it to one side and jogged along through a wild desert country with no roads or trails, through chollas, desert brush and torote trees.

123 When we neared a hill of dark volcanic rock a number of Seri In-
312 dians darted out, and with their help we reached a camp near the coast
341 where Roberto had recently located a small well of sweet water.

123 We were up long before the sun; the following day the eighth of
• 261 March, but the baking of bread delayed our breakfast, so that while we ate, forty Indians were looking on at us. Little ones with streaming hair and fluttering shirt tails, paddled over the sand hills as fast as their brown legs could carry them in their fear of being late. Women in patched and ragged skirts hurried and plowed through the sand and over thorny mesquite brush to be in time---for what? To see the *gringos* eat their breakfast and to possibly pick up a few crumbs. Each grain of corn, each bean, even a piece of dough half the size of a dime is precious and carefully garnered and eaten.

To eat under the devouring eyes of these people who rarely have enough to eat and most of the time not half enough, to see the hungry dog-like look as I tried to swallow a piece of bread, to see the children half start up as if to run and seize it and watch the mothers jerk them back, to see them eye hungrily our sacks of provisions and not dart to touch them, is enough to make one choke.

Any bread left over we broke into little chunks and gave to the children. I then gave each child two lumps of cube sugar. A little later, as they would hide their sugar and try to repeat, I lined up fifteen or twenty eager, frowsy bare-legged boys and girls and gave each an orange.

123 Later, the mother would trade a basket or a hair brush for an
439 orange, a knife for two oranges. They brought Pelican skin rugs made from six Pelican hides sewed together which used to form their kilts. For these I traded four yards of *manta*, or cotton goods, of which they made garments.

I soon had a thriving trade on hand, especially in necklaces. I had bought a few cheap glass bead necklaces at fifteen cents each. These set them wild. For native necklaces of seeds I traded the bead ones. I secured most of the necklaces, and when they ran out the children were sent by their mothers into the brush to gather more beans and seeds. These were hastily strung and hung around the neck and exposed to my admiring gaze, but it was useless as I would not trade any more beads. I had to save them for the Seris on the Island. I would have given everything away there.

Also, I had to consider the moral effect of them securing things without effort on their part. Only for service, must we pay in food or goods. For bringing food, water, to go hunting for us, or for trade---except giving things to the little children. It was heart-breaking, but they were lucky to have water. Like many others less primitive, they work, hunt, fish, only when hunger drives them.

231 With the people were a crowd of undersized, starved, bony dogs. A Seri cleans up everything and the dogs get the rest. Each day they are gnawing on some old fish head that is long past having any nourishment, and is tough and strong as rawhide, but hope springs eternal in an Indian dog's heart or stomach, and again and again, will they search out an old fish head or Pelican bone. Discouraged, never!

262

262 DIET--staple and other foods consumed; seasonal changes in diet; proportion of various foods in diet; group differences in diet (e.g., by age, sex, social class); discriminations between edible and harmful foods; food preferences and avoidances; food taboos; etc. See also:

Food processing 25
Nutritional balance 148
Standard of living 511
Religious taboos 784
Food taboos during pregnancy 843
Infant feeding 853

1: McGee E-5 (1894-1895)1898 NU31 Seri NU31

sizíi), laid inverted in the jacales; these shells also being used in natural condition. No wrought shells, molluscan or chelonian, were observed in use or found either in the jacales or on the hundreds of abandoned sites; but the vicinage of the rancherias, the abandoned camps and house sites, and the more frequented paths are bestrewn with slightly worn shells, evidently used for a time and then lost or discarded. The relative abundance of the fictile ware and this natural shell ware in actual use is about 1:3; i. e., each adult female usually possesses a single olla of the conventional type, and there may be one or two extra ollas and two or three clay dishes in each band or clan, while each matron or marriageable maid is usually supplied with two to four shell-cups and each little girl with one or two; and there are twice as many carapace trays as clay dishes. The disproportion of

FIG. 19—Shell-cup.

pottery and shell about the abandoned sites is naturally much greater; for the former is the most highly prized industrial possession of the women, while the shells are easily gained and lightly lost.

With respect to solid food the Seri may be deemed omniverous though their adjustment to habitat is such that they are practically carniverous.

The most conspicuous single article in the dietary of the tribe is the local green turtle. This chelonian is remarkably abundant throughout Gulf of California; but its optimum habitat and breeding-place would appear to be El Infiernillo, whose sandy beaches are probably better adapted to egg laying and hatching than any other part of the coast. Here it has been followed by the Seri; perhaps half of the aggregate life of the tribe is spent within easy reach of its feeding and breeding grounds, and tribesman and turtle have entered into an inimical com-

1: McGee E-5 (1894-1895)1898 NU31 Seri NU31

munalty something like that of Siouan Indian and buffalo in olden time, whereby both may benefit and whereby the more intelligent communal certainly profits greatly. The flesh of the turtle yields food; some of its bones yield implements; its carapace yields a house covering, a convenient substitute for umbrella or dog-tent, a temporary buckler, and an emergency tray or cistern, as well as a comfortable cradle at the beginning of life and the conventional coffin at its end; while the only native foot-gear known is a sandal made from the integument of a turtle-flipper.

FIG. 20.—Turtle harpoon.

Doubtless the eggs and newly hatched young of the turtle are eaten, and analogy with other peoples indicates that the females are sometimes captured at the laying grounds or on their way back to water; but observation is limited to the taking of the adult animal at sea by means of a specialized harpoon. A typical specimen of this apparatus, as constructed since the introduction of flotsam iron, is illustrated in figure 20. It comprises a point 3 or 4 inches long, made from a nail or bit of stout wire, rudely sharpened by hammering the tip (eckl) between cobbles, and dislodging the loosened scales and splinters by thrusts and twirlings in the ground; this is set firmly and cemented with mesquite gum into a foreshaft of hard wood, usually 4 or 5 inches long, notched to receive a cord and rounded at the proximal end; the rounded end of this foreshaft fits into a socket of the main shaft, which may be either a cane-stalk (as shown in the figure) or a section of mesquite root; while a stout cord is firmly knotted about the foreshaft and either attached to the distal portion of the main shaft or carried along it to the hand of the user. The main shaft is usually 10 or 12 feet long, with the harpoon socket in the larger end, and is manipulated by a fisherman sitting or standing on his balsa. On catching sight of a turtle lying in the water, he approaches stealthily, preferably from the rear yet in such wise as not to cast a frightening shadow, sets the foreshaft in place, guides the point close to the carapace, and then by a quick thrust drives the metal through the shell. The frictional resistance between the chitin and the metal holds the point in place, and although the foreshaft is jerked out at the first movement of the transfixed animal the cord prevents escape; and after partial tiring

1: McGee E-5 (1894-1895)1898 NU31 Seri NU31

262 Probably second in importance among Seri prey, as a food-source merely, stand the multifarious fishes with which the waters of Seriland teem, particularly if the class be held to comprise the cetaceans and seals and selachians ranked as leaders of the fish fauna in Seri lore.

225 Naturally, whales lie outside the ordinary range of Seri game, yet they are not without place in the tribal economy. During the visit to the Seri rancheria near Costa Rica in 1894, it was noted that various [173] events—births, deaths, journeys, etc—were referred to "The Time of the Big Fish"; and it was estimated from apparent ages of children and the like that this chronologic datum might be correlated roughly with the year 1887. The era-marking event was memorable to Mashém, to the elderwomen of the Turtle clan, and to other mature members of the group, because they had been enabled thereby to dispense with hunting and fishing for an agreeably long time, and because they had moved their houses; but the providential occurrence was not interpreted at the time. On visiting Isla Tiburon in 1895, the interpretation became clear; along 172 the western shore of Bada Ballena, near the first sand-spit north of the bight, lay the larger bones of a whale, estimated from the length of the mandibles and the dimensions of the vertebræ to have been 75 or 80 feet long. It was evident that the animal had gone into the shoal water at exceptionally high tide and had stranded during the ebb; while the condition of the bones suggested an exposure to the weather of perhaps half a dozen years. On the shrubby bank above the beach, [361] hard by the bleaching skeleton, stood the new rancheria, the most extensive seen in Seriland, comprising some fifteen or twenty habitable jacales; and fragments of ribs and other huge bones about and within the huts[1] attested transportation thither after the building, while the shallowness of the trails and the limited trampling of the big shrubbery gave an air of freshness to the site and surroundings. The 172 traditions and the relics together made it manifest that "The Time of 262 the Big Fish" had indeed marked an epoch in Seri life; that when the leviathan landed (whether through accident or partly through efforts of balsa men) it was quickly recognized as a vast contribution to the Seri larder; and that some of the clans, if not the entire tribe, gathered to gorge first flesh and blubber, next sun-softened cartilage and chitin, and then epiphyses and the latter bones. Some of the ribs were splin- [252] tered and crushed, evidently by blows of the hapf, in order to give access to the cancellate interiors; several of the vertebræ were battered and split, and nearly all of the bones bore marks of hapf blows, aimed to loosen cartilaginous attachments, start epiphyses, or remove spongy and greasy processes. Little trace of fire was found; in one case a mandible was partly scorched, though the burning appeared to be fortuitous and long subsequent to the removal of the flesh; and a bit of charred and gnawed epiphysis, much resembling the fragments of half-cooked turtle plastron scattered over Seriland, was picked up in

[1] One of the smaller vertebræ and part of a rib are shown in the upper figure of plate VI.

1: McGee E-5 (1894-1895)1898 NU31 Seri NU31

172 one of the huts. The condition of the remains and the various indications connected with the rancheria corroborated the tradition that the 262 great creature had afforded unlimited and acceptable food for many moons; and various expressions of the tradition indicated that the event, though the most memorable of its class, was not unique in Seri lore.

225 A few bones and fragments of skin of the seal were found in and about the rancherias on Isla Tiburon, and an old basket rebottomed with sealskin was picked up in a recently abandoned jacal on Rada Ballena; a few bones provisionally identified with the porpoise (which haunts Boco Infierno in shoals) were also found amid the refuse about the old rancheria at the base of the long sand-spit terminating in Punta Tormenta; but nothing was learned specifically concerning the chase and consumption either of these animals or of the abundant sharks from which the island is named.

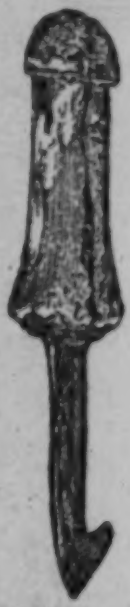

FIG. 21.—Fish-spear-head.

262 Among the exceedingly limited food supplies brought from the coast by the Seri group at Costa Rica in 1894, were rank remnants of partly desiccated fish, usually gnawed down to heads and tails; and Mashém and others spoke of fish as a habitual food, while Señor Encinas regarded it as the principal element of the tribal dietary. The harder bones and heavier scales of [172] several varieties of fish were also found abundantly among the middens of both mainland and Tiburon shores in 1895. None of the remains bore noticeable traces of fire; and all observations, including those of Señor Encinas, indicate that the smaller varieties of fish are habitually eaten raw, either fresh or partially dried, according to the state of appetite at the time of taking—or the condition of finding when picked up as beach flotsam. But a single piscatorial device was observed, 227 i. e., the barbed point and foreshaft, shown in figure 21,—the iron point being, of course, acultural, and probably obtained surreptitiously. This harpoon, which measures 6 inches in length over all, is designed for use in connection with the main shaft of a turtle-catching tackle; and it is evidently intended for the larger varieties, perhaps porpoises or sharks. In 1827 Hardy observed a related device:

> They have a curious weapon which they employ for catching fish. It is a spear with a double point, forming an angle of about 50°. The insides of these two points, which are 6 inches long, are jagged, so that when the body of a fish is forced between them, it can not get away on account of the teeth.[1]

222 325 Don Andrés Noriega, of Costa Rica, described repeatedly and circumstantially a method of obtaining fish by aid of pelicans, in which a

[1] Travels, p. 256.

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bottoms literally writhing with fishes stranded among beds of mollusks and slimy with the abounding plankton of a fecund coast. The region is one of ample, albeit lowly, food supply, where every experience tends toward inert reliance on providential chance, and where the stimulus of consistently conscious necessity seldom stirs the inventive faculty.

Closely connected with fish as a Seri food-source are the various molluscan and crustacean forms collectively called shellfish; and these contribute a considerable share of the sustenance of the tribe.

Apparently the most important constituent of this class of foods is the Pacific coast clam, which abounds in the broad mud-flats bordering Laguna La Cruz and other lagoons of Seriland, and which was still more abundant during a subrecent geologic epoch, to judge from the immense accumulation of the shells in Punta Antigualla. The clams are usually taken at low tide, without specialized apparatus. They are located by feeling with the feet in shallow water, and caught either with toes or with fingers, to be tossed into any convenient receptacle. When the water is entirely withdrawn from the flats, they are located by means of their holes, and are extricated either with a shell-cup or with some other improvised implement. Frequently the entire mess is thrown into a fire until the shells open, when they are withdrawn and the mollusks devoured practically raw; perhaps more commonly the shells are opened by blows of the hupf, and eaten without semblance of cooking; and, except on the surface, no trace of roasting was found among the vast accumulations of shells in Punta Antigualla.

Perhaps second to the clam in frequency of use is the local oyster, which abounds about the more sheltered shores of Tiburon. It is gathered with the hands, aided perhaps by a stone or stick for dislodging the shells either from the extended offshore beds at extreme low water, or from the roots of a mangrove-like shrub at a medium stage. The shells, like those of the clam, are frequently opened by partial roasting; and shells, sometimes scorched, are extensively scattered over the interior, indicating that the oyster is a favorite portable food. The popularity of this bivalve is shared by the Noah's-ark (*Arca*), to which some mystical significance is apparently ascribed; and the abundant limpets and bivalves and other mollusks are eaten indiscriminately, to judge from the abundance of their shells in the middens. The ordinary crab, too, is a favorite article of food, and its claws are numerous in camp and house refuse; while the lobster-like deep-water crab is introduced into the menu whenever brought to the surface by storms, as shown by its massive remains in the middens.

On the whole, shellfish form a conspicuous factor in Seri economy by reason of the considerable consumption of this class of food; but, viewed in the broader industrial aspect, the produce is notably primitive, and significant chiefly as indicating the dearth of mechanical and culinary devices.

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224 semiceremonial collective chase. The fleet but wary antelope, the pugnacious peccary, the wandering puma and jaguar, and the mountain sheep of the rocky fastnesses, are among the favorite objects of this style of chase; while the larger land birds and some of the water-fowl are taken in similar fashion.

The smaller land game comprises a tortoise or two, all the local

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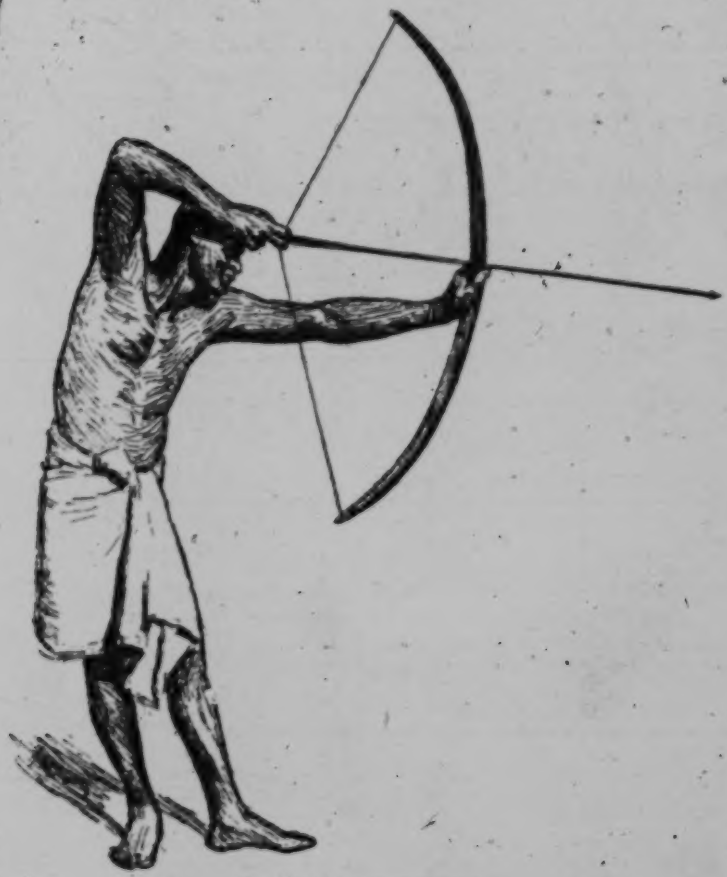

FIG. 23.—African archery posture.

snakes and lizards, and a good many insects, besides various birds, including hawks and owls, as well as the eaters of seeds and insects. The crow and vulture are also classed as edible, though they are rare in Seriland, probably because of the effective scavengering of the province by its human residents. It is a significant fact that the

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smaller rodents, especially the long-tail nocturnal squirrel, are excluded from the Seri menu by a rigidly observed tabu of undiscovered meaning. A general consequence of this tabu is readily observed on entering Seriland; there is a notable rarity of the serpents, the high-colored and swift efts, and the logy lizards and dull phrynosomas so abundant in neighboring deserts, as well as of song birds and their nests; and this dearth is coupled with a still more notable abundance of the rodents, which have increased and multiplied throughout Seriland so abundantly that their burrows honeycomb hundreds of square miles of territory. A special consequence of the tabu is found in the fact that the myriad squirrel tunnels have rendered much of the territory impassable for horses and nearly so for pedestrians, and have thereby served to repel invaders and enable the jealous tribesmen to protect their principality against the hated alien. Seriland and the Seri are remarkable for illustrations of the interdependence between a primitive folk and their environment; but none of the relations are more striking than that exemplified by the timid nocturnal rodent, which, protected by a faith, has not only risen to the leading place in the local fauna, but has rewarded its protectors by protecting their territory for centuries.

In both the collective and the strategic chase, constant advantage is taken of weakness and incapacity, whether temporary or permanent, of the prospective quarry; so that diseased and wounded as well as sluggish and stupid animals are eliminated. The effect of this policy on the fauna is undoubtedly to extinguish the less capable species and to stimulate and improve the more capable; i. e., the presence of the human factor merely intensifies the bitter struggle for existence in which the subhuman things of this desert province are engaged. At the same time, the entrance of the human folk into the struggle characteristic of subhuman species serves to bar them from one of the most helpful ways to the advancement of their kind—i. e., the way leading through cotoleration with animals to perfected zoöculture. The most avidly sought weanlings in the Seri chase are the helpless young, and the heavily gravid dams which are pursued and rent to fragments with a horrid fury doubtless reflecting the practical certainty of capture and the exceptionally zoöculent titbits afforded by the fetal flesh; naturally the cruel custom reacts on habitual thought in such wise that the very sight of pregnancy or travail or newborn helplessness awakens slumbering blood thirst and impels to ferocious slaughter. To such custom and deep-planted mental habit may be ascribed some of the most shocking barbarities in the history of Seri rapine, tragedies too terrible for repetition save in bated breath of survivors, yet explaining the utter horror in which the Seri marauder is held on his own frontier. At the same time the hunting custom and the mental habit explain the blindness of the Seri to the rudiments of zoöculture, and clarify their intolerance of all animal associates, save the sly coyote that habitually

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177 224 knives in severing the tough integuments and tendons of horses and kine, although the tendency has not yet resulted (as elsewhere noted, ante, pp. 153–154) in the development of a knife-sense; and although boys on the frontier play at roping dogs, no effort to use the riata or any form of rope is made in the actual chase. As naively explained by Mashém amid approving grunts from his clan-mates, they have no time for ropes or knives when hungry.

262 A quantitatively unimportant yet by no means negligible fraction of the normal diet of Seriland is vegetal; and while the sources of vegetal food are many and diverse, the chief constituent is a single product characteristic of American deserts, viz, the tuna, or prickly pear.

222 All of the cacti of the region yield tunas in considerable quantity. The pitahaya is perhaps the most abundant producer, and its name is often given to the fruit; the huge saguaro affords an enormous annual yield, and the still more gigantic saguesa is even more prolific, especially in its immense forests along the eastern base of Sierra Seri; the cina adds materially to the aggregate product, while the nopal, or common prickly pear, contributes a quota acquiring importance from the facility with which it may be harvested. The fruits of all these cacti are sometimes classed as sweet tunas, in contradistinction from the sour tunas yielded in great abundance by the cholla and consumed with avidity by stock, though seldom eaten by men. The edible tunas average about the size of lemons, and resemble figs save that their skin is beset with prickles. The portion eaten is a luscious pulp, filled with minute seeds like those of the fig save that they are too hard for mastication or digestion, its flavor ranging from the sickly sweet of the overcultivated fig to a pleasant acidity. While occasional tunas may be found at any time during the year, the normal harvest occurs about midsummer, or shortly before the July-August humid season, and lasts for several weeks. During the height of the season the clans withdraw from the coast and give undivided attention to the collection and consumption of the fruits, gorging them in such quantities that, according to the testimony of the vaqueros, they are fattened beyond recognition. Commonly the tunas are eaten just as they are gathered, and the families and larger bands move about from pitahaya to pitahaya and from valley to valley in a slovenly chase of this natural harvest, until waning supply and cloying appetite drive them back to the severer chase of turtle and pelican. The fruit is not cooked, and never preserved save in the noisome way of nature, and is rarely transported in quantities or over distances of industrial importance; yet the product may have some connection with the basketry of the tribe. The devices for collecting the fruits, especially from the lofty saguaro and saguesa, are mere improvisations of harpoon shafts, paloblanco branches, or chance cane-stalks carried primarily for arrow-making or balsa construction.

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There is no such well-studied and semiceremonial apparatus for tuna gathering as, for example, the Papago device made from the ribs of the dead saguaro in accordance with traditional formula.

Perhaps second in importance among the vegetal constituents of Seri diet is the mesquite bean, which is gathered in random fashion whenever a well-loaded tree is found and other conditions favor. The woody beans and still woodier pods are roughly pulverized by pounding with the hupf on any convenient stone used as an abat (metate or mortar), or, if suitable stones are not at hand, they are carried in baskets or improvised bags to the nearest shore or other place at which stones may be found. The half-ground grist is winnowed in the ordinary way of tossing in a basket; and the grinding and winnowing continue alternately until a fairly uniform bean meal is obtained. So far as was actually observed this is eaten raw, either dry in small pinches or, more commonly, stirred in water to form a thin atole; but expressions at Costa Rica indicated that the meal is sometimes stirred in boiling water or pot-liquor, and thus partially cooked, in times of rest and plenty.

Other vegetal products used as food comprise a variety of seeds collected from sedges and grasses growing about the mud-flats of Laguna La Cruz and other portions of the province, as well as the seeds and nuts of the scant shrubbery of shores and mountains; while a local seaweed or kelp is eaten in small quantity, apparently as a condiment, and is sometimes carried on journeys even as far as Costa Rica, where specimens were obtained in 1894.

It is of interest to note that one of the most distinctive constituents of the Sonoran flora, and one intimately connected with human life in the great neighboring province of Papagueria, is of negligible rarity in Seriland; this is the visnaga (*Echinocactus*, probably of two or three species), the thorniest of the cacti and the only one containing consumable pulp and sap. This peculiar plant is of no small interest in itself as a striking example of the inverse relation between protective devices of chemical sort (culminating in acrid, offensive, or toxic juices) and the mechanical armaments so characteristic of desert plants;[1] it is of still deeper interest economically as the sole source of water over broad expanses of the desert, and one to which hundreds of pioneers and travelers have been indebted for their lives; and it is of interest, too, as a factor of Papago faith, in which the visnaga ranks among the richer guerdons of the rain gods. Throughout most of Papagueria this cactus is fairly abundant; usually there are several specimens to the square mile of suitable soil (it is not found in playas or on the ruggeder sierras), so that it is always within reach of the sagacious traveler; but it diminishes in abundance toward the borders of Seriland, and not more than a dozen examples were found in the portions of that province traversed by the 1895 expedition. Its rare occurrence,

[1] Cf. The Beginning of Agriculture: The American Anthropologist, vol. viii, Oct., 1895, pp. 350-373.

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extreme lightness in proportion to capacity, a quality due to the spongy character of the torote coil and to the thinness of the splints used in the woof. The inside dimensions, weight, and dry-measure capacity (filled to the level of the brim with rice) of two typical specimens approaching extremes in size are indicated in the accompanying table. As noted elsewhere, the ware is absolutely without decorative devices in weave, paint, or form; it is baldly utilitarian, a model of economy in material and in the balance between structure and function, approaching in this respect the thin-walled canteen-olla, the graceful balsa, and the light but effective harpoon. The structural correspondence of the ware to a widespread type and its limited use among the tribe suggest an aecultural origin for the Seri basketry; but the delicate adjustment of means to ends in the manufacture and the strictly local character of the material quite as strongly suggest an indigenous development.

Museum No.	Diameter	Depth	Weight	Capacity
174529....	38 cm. (15 in.)	9.5 cm. (3¾ in.)	482 g. (17 oz.)	6.25 l. (6.6 qt.)
174528a ..	25 cm. (9 in.)	5.0 cm. (2 in.)	142 g. (5 oz.)	1 l. (1.06 qt.)

It is impossible to portray justly the food habits of the Seri without some reference to a systematic scatophagy, which seems to possess fiducial as well as economic features. In its simplest aspect this custom is connected with the tuna harvests; the fruits are eaten in enormous quantity, and are imperfectly digested, the hard-coated seeds especially passing through the system unchanged; the feces containing these seeds are preserved with some care, and after the harvest is passed the hoard (desiccated, of course, in the dry climate) is ground between hupf and abst, and winnowed in baskets precisely as are the mesquite beans; and the product is then eaten either dry or in the form of atole like the mesquite meal. In superficial view this food factor is the precise homologue of the "second harvest" of the California Indians as described by Clavigero, Baegert,[1] and others; but it gains importance, among

[1] An Account of the Aboriginal Inhabitants of the Californian Peninsula, as given by Jacob Baegert, a German Jesuit missionary. . . . Translated and arranged for the Smithsonian Institution by Charles Rau; Ann. Rep. Smithsonian Inst. for 1863, pp. 352-369. Baegert's account of foods (pp. 363-367) is so apposite as to be worthy of quotation nearly entire:

"Notwithstanding the barrenness of the country, a Californian hardly ever dies of hunger, except, perhaps now and then an individual that falls sick in the wilderness and at a great distance from the mission, for those who are in good health trouble themselves very little about such patients, even if these should happen to be their husbands, wives, or other relatives; and a little child that has lost its mother or both parents is also occasionally in danger of starving to death, because in some instances no one will take charge of it, the father being sometimes inhuman enough to abandon his offspring to its fate.

"The food of the Californians, as will be seen, is certainly of a mean quality, yet it keeps them in a healthy condition, and they become strong and grow old in spite of their poor diet. The only period of the year during which the Californians can satisfy their appetite without restraint is the season of the pitahayas, which ripen in the middle of June and abound for more than eight weeks. The gathering of this fruit may be considered as the harvest of the native inhabitants. They can eat as much of it as they please, and with some this food agrees so well that they become corpulent during that period; and for this reason I was sometimes unable to recognize at first sight individuals, otherwise perfectly

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262 514 the Seri at least, as the sole method of storing or preserving food-supplies, and hence as the germ of industrial economy out of which a

000 familiar to me, who visited me after having fed for three or four weeks on these pitahayas. They do not, however, preserve them, and when the season is over they are put again on short rations. Among the roots eaten by the Californians may be mentioned the yuka, which constitutes an important article of food in many parts of America, as, for instance, in the island of Cuba, but is not very abundant in California. In some provinces it is made into a kind of bread or cake, while the Californians, who would find this process too tedious, simply roast the yukas in a fire like potatoes. Another root eaten by the natives is that of the aloe plant, of which there are many kinds in this country. These species of this vegetable, however, which afford nourishment—for not all of them are edible—do not grow as plentifully as the Californians might wish, and very seldom in the neighborhood of water; the preparations, moreover, which are necessary to render this plant eatable, require much time and labor. . . . I saw the natives also frequently eat the roots of the common reed, just as they were taken out of the water. Certain seeds, some of them not larger than those of the mustard, and different sorts in pods that grow on shrubs and little trees, and of which there are, according to Father Piccolo, more than sixteen kinds, are likewise diligently sought; yet they furnish only a small quantity of grain, and all that a person can collect with much toil during a whole year may scarcely amount to 12 bushels.

"It can be said that the Californians eat, without exception, all animals they can obtain. Besides the different kinds of larger indigenous quadrupeds and birds, they live nowadays on dogs and cats; horses, asses, and mules; fowl, as owls, mice, and rats; lizards and snakes; bats, grasshoppers, and crickets; a kind of green caterpillar without hair, about a finger long, and an abominable white worm of the length and thickness of the thumb, which they find occasionally in old rotten wood, and consider as a particular delicacy. The chase of game, such as deer and rabbits, furnishes only a small portion of a Californian's provisions. Supposing that for 100 families 100 deer are killed in the course of a year, which is a very favorable estimate, they would supply each family only with three meals in three hundred and sixty-five days, and thus relieve but in a very small degree the hunger and the poverty of these people. The hunting for snakes, lizards, mice, and field-rats, which they practise with great diligence, is by far more profitable and supplies them with a much greater quantity of articles for consumption. Snakes, especially, are a favorite sort of small game, and thousands of them find annually their way into the stomachs of the Californians.

"In catching fish, particularly in the Pacific, which is much richer in that respect than the Gulf of California, the natives use neither nets nor hooks, but a kind of lance—that is, a long, slender, pointed piece of hard wood—which they handle very dexterously in spearing and killing their prey. Sea-turtles are caught in the same manner.

"I have now mentioned the different articles forming the ordinary food of the Californians; but, besides these, they reject nothing that their teeth can chew or their stomachs are capable of digesting, however tasteless or unclean and disgusting it may be. These they will eat the leaves of the Indian fig-tree, the tender shoots of certain shrubs, tanned or untanned leather, old straps of rawhide, with which a house was tied together for years; fish, the lungs of poultry, sheep, goats, and calves; putrid meat or fish swarming with worms, damaged wheat or Indian corn, and many other things of that sort which may serve to appease the hunger they are almost constantly suffering. Anything that is thrown to the dogs will be also accepted by a Californian, and he takes it without feeling offended, or thinking for a moment that he is treated below his dignity. For this reason no one took the trouble to clean the wheat or maize, which was cooked for them in a large kettle, of the black worms and little bugs, even if the numbers of these vermin had been equal to that of the grains. By a daily distribution of about six bushels of bran (which they are in the habit of eating without any preparation) I could have induced all my parishioners to remain permanently in the mission, excepting during the time when the pitahayas are gathered.

"I saw one day a blind man, 70 years of age, who was busily engaged in pounding between two stones an old shoe made of raw deerskin, and whenever he had detached a piece he transferred it promptly to his mouth and swallowed it; and yet this man had a daughter and grown grandchildren. As soon as any of the cattle are killed and the hide is spread out on the ground to dry, half a dozen boys or more will instantly rush upon it and commence to work with knives, flints, and their teeth, tearing and scratching off pieces, which they eat immediately, till the hide is full of holes or scattered in all directions. In the mission of St. Ignatius and in others further toward the north there are persons who will attach a piece of meat to a string and swallow it and pull it out again a dozen times in succession, for the sake of prolonging the enjoyment of its taste.

171 262 514 252 "I must here ask permission of the kind reader to mention something of an exceedingly disgusting and almost inhuman nature, the like of which probably never has been recorded of any people in the world, but which demonstrates better than anything else the whole extent of the poverty, uncleanness, and variety of these wretched beings. In describing the pitahayas I have already stated that they contain a great many small seeds resembling grains of powder. For some reason unknown to me these seeds are not condemned in the stomach, but pass off in an undigested state, and in order to save them the natives collect during the season of the pitahayas that which is discharged from the

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feeble thrift-sense may be regarded as emerging. And the rise of thrift in Seriland, like esthetic and industrial beginnings generally, is shaped

human body, separate the seeds from it, and roast, grind, and eat them, making merry over their loathsome meals, which the Spaniards therefore call the second harvest of the Californians. [This statement is corroborated in all particulars by Clavigero in his Storia della California, Venice, 1789, vol. i, p. 117.] When I first heard that such a filthy habit existed among them I was disinclined to believe the report, but to my utter regret I became afterwards repeatedly a witness to the proceeding, which they are unwilling to abandon, like many other bad practices [probably because of the fiducial character of the custom—W J M.]. Yet I must say in their favor that they have always abstained from human flesh, contrary to the horrible usage of so many other American nations who can obtain their daily food much easier than these poor Californians.

"They have no other drink but the water, and heaven be praised that they are unacquainted with such strong beverages as are distilled in many American provinces from Indian corn, the aloë, and other plants, and which the Americans in those parts merely drink for the purpose of intoxicating themselves. When a Californian encounters during his wanderings a pond or pool, and feels a desire to quench his thirst, he lies flat on the ground and applies his mouth directly to the water. Sometimes the horns of cattle are used as drinking vessels.

"Having thus far given an account of the different articles used as aliment by the aborigines of the peninsula, I will now proceed to describe in what manner they prepare their victuals. They do not cook, boil, or roast like people in civilized countries, because they are neither acquainted with these methods nor possessed of vessels and utensils to employ for such purposes; and, besides, their patience would be taxed beyond endurance if they had to wait till a piece of meat is well cooked or thoroughly roasted. Their whole process simply consists in burning, singeing, or roasting in an open fire all such victuals as are not eaten in a raw state. Without any formalities, the piece of meat, the fish, bird, snake, field mouse, lizard, or whatever it may be is thrown into the flames or on the glowing embers, and left there to smoke and to sweat for about a quarter of an hour; after which the article is withdrawn, in most cases only burned or charred on the outside, but still raw and bloody within. As soon as it has become sufficiently cool, they shake it a little in order to remove the adhering dust or sand, and eat it with great relish. Yet I must add here, that they do not previously take the trouble to skin the mice or disembowel the rats, nor deem it necessary to clean the half-emptied entrails and maws of larger animals, which they have to cut in pieces before they can roast them. Seeds, locusts, grasshoppers, green caterpillars, the white worms already mentioned, and similar things that would be lost, on account of their smallness, in the embers and flames of an open fire, are parched on hot coals, which they constantly throw up and shake in a turtle shell or a kind of frying pan woven out of a certain plant. What they have parched or roasted in this manner is ground to powder between two stones, and eaten in a dry state. Bones are treated in like manner.

"They eat everything unsalted, though they might obtain plenty of salt; but since they cannot dine every day on roast meat and constantly change their quarters, they would find it too cumbersome to carry always a supply of salt with them.

"The preparation of the aloë, also called *mezcals* or *magueys* by the Spaniards, requires more time and labor. The roots, after being properly separated from the plants, are roasted for some hours in a strong fire, and then buried, twelve or twenty together, in the ground, and well covered with hot stones, hot ashes, and earth. In this state they have to remain for twelve or fourteen hours, and when dug out again they are of a fine yellow color, and perfectly tender, making a very palatable dish, which has served me frequently as food when I had nothing else to eat, or as dessert after dinner in lieu of fruit. But they act at first as a purgative on persons who are not accustomed to them, and leave the throat somewhat rough for a few hours afterwards.

"To light a fire the Californians make no use of steel and flint, but obtain it by the friction of two pieces of wood. One of them is cylindrical, and pointed on one end, which fits into a round cavity in the other, and by turning the cylindrical piece with great rapidity between their hands, like a twirling stick, they succeed in igniting the lower piece if they continue the process for a sufficient length of time.

"The Californians have no fixed time for any sort of business, and eat, consequently, whenever they have anything, or feel inclined to do so, which is nearly always the case. I never asked one of them whether he was hungry who failed to answer in the affirmative, even if his appearance indicated the contrary. A meal in the middle of the day is the least in use among them, because they all set out early in the morning for their foraging expeditions, and return only in the evening to the place from which they started, if they do not choose some other locality for their night quarters. The day being thus spent in running about and searching for food, they have no time left for preparing a dinner at noon. They start always empty-handed; for if perchance something remains from their evening repasts they certainly eat it during the night in waking moments or on the following morning before leaving. The Californians can endure hunger easier and much longer than other people; whereas they will eat enormously if a chance is given. I often tried to buy a piece of venison from them when the skin had but lately been stripped off the deer, but regularly received the answer that nothing was left; and I knew well enough that the hunter who killed the animal needed no assistance

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262 514 by faith and attendant ceremony; for the doubly consumed food is credited with intensified powers and virtues, and held to be specially potent in the relief of hunger and in giving endurance for the hard warpath or prolonged chase; it is—and makes—very strong ("mucho fuerte"), in the laconic and confident explanation of Mashóm. Incongruous as the custom is to higher culture, it finds natural suggestion in the everyday habits of the tribe, who are wonted not only to the eating of animal entrails in raw and uncleaned condition, but especially to the relief of the sharpest pangs of hunger by means of the soft structures and their seminassimilated contents—an association of much influence in primitive thought. Concordantly with the custom and the faith grown out of it, the excreta in general take a prominent place in the Seri mind; the use of urine in ablution, etc, is little understood and may be passed over; but all bony feces—and it may be noted that the "sign" of the Seri more resembles that of wolves or snake-eating swine than that of men—following gorges of large quarry are customarily located and kept in mind for recourse in time of ensuing shortage, when the mass is ground on the abst and reconsumed; and even the ordinary discharge is preserved during the seasons of less reliable food-supply.

514 764 There is an obscure connection between this curious and repulsive food custom of the Seri and the mortuary customs of the tribe, which

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000 to finish it. Twenty-four pounds of meat in twenty-four hours is not deemed an extraordinary ration for a single person, and to see anything eatable before him is a temptation for a Californian which he cannot resist; and not to make away with it before night would be a victory he is very seldom capable of gaining over himself."

Clavijero's account of the food-habits of the California Indians is similar, though generally less explicit. According to him the seeds forming the "second harvest of pitahayas" are extracted carefully while fresh, and are afterward roasted, ground, and preserved in the form of meal against the ensuing winter. Of the reswallowing habit, he says:

"The savages living in the northern part of the peninsula have found the secret, unknown to mortals in general, to eat and re-eat the same meal repeatedly. They tie a string around a mouthful of meat dried and hardened in the sun. After chewing it for a while they swallow it, leaving the string hanging from the mouth. After two or three minutes, by means of the string they draw the meat up again to be rechewed, and this they repeat as many times as may be necessary until the morsel is consumed or so softened that the string will not hold it any longer. In extracting it from the throat they make such a noise that to one who has not before heard it it appears that they are choking themselves.

"When many individuals are gathered together to eat in this manner it is practiced with more ceremony. They seat themselves on the ground, forming a circle of eight or ten persons. One of them takes the mouthful and swallows it, and afterwards draws it up again and passes it to the next one, and this one to another, proceeding thus around the circle with much enjoyment until the morsel is consumed. This has astonished the Spaniards who have seen it, and indeed it would not be credible if it had not been unanimously testified to by all who have been in that country. Several Jesuits who did not believe this, notwithstanding that sincere and prominent persons confirmed it, having afterwards gone to California saw it with their own eyes. Among those Indians who have embraced Christianity this loathsome and dangerous method of eating has been abandoned in consequence of the continual reproofs of the missionaries." (Historia de la Antigua ó Baja California, obra postuma del Padre Francisco Javier Clavijero; Mexico, 1852, p. 34.)

191 262 The records of Clavijero and Burgert indicate fair correspondence in the food habits of the California Indians and the Seri, though there are certain noteworthy differences, e. g., the taboo of the badger among the former and of the ground-squirrel among the latter; it would also appear that the Californians were the more largely vegetarian and the better advanced in culinary processes. The customs of the Seri throw light on the genesis of "re-eating", for the process would appear to be but an extension of the repeated mouthing and swallowing of tendinous strings still attached to the bones of larger animals.

1: McGee E-5 (1894-1895)1898 NU31 Seri NU31

514 764 was not detected until the opportunity for personal inquiry had gone by. About the rancherias on Isla Tiburon, and especially about the extensive house-group at the base of Punta Tormenta, there are burial places marked by cairns of cobbles, or by heaps of thorny brambles where cobbles are not accessible; and most of these cairns and bramble-piles are supplemented by hoards of desiccated feces carefully stored in shells, usually of *Arca* (a typical specimen is illustrated in figure 25). The hoards range from 50 to 500 shells in quantity, and there were fully a score of them at Punta Tormenta alone. About the newer rancherias, as at Rada Ballena, where there are no cemeteries, the hoards are simply piled about small clumps of shrubbery. The meaning of the association of the dietetic residua and death in the Seri mind is not wholly clear; yet the connection between the "strong food" for the warpath and the

[262 415]

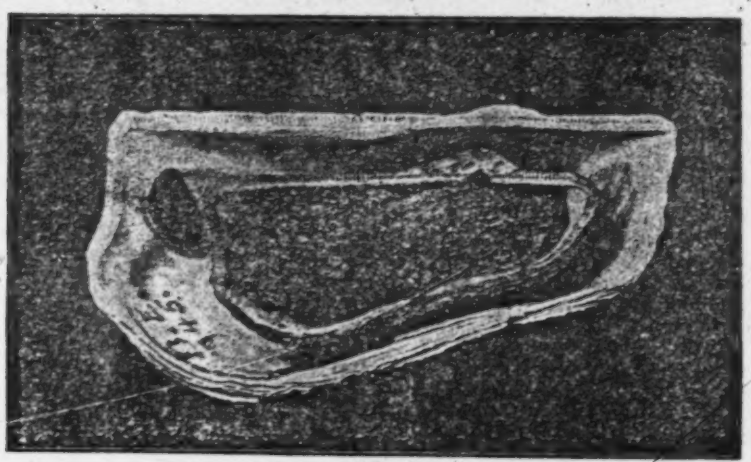

FIG. 25.—Scatophagic supplies.

mystical food for the manes in the long journey to the hereafter is close enough to give some inkling of the meaning.[1]

262 In recapitulating the food supplies of the Seri it is not without interest to estimate roughly the relative quantities of the several constituents consumed; and the proportions may be made the more readily comprehensible by expression in absolute terms. As a basis for the quantitative estimate, it may be assumed that the average Seri, living, as he does, a vigorous outdoor life, consuming, as he does, a diet of less average nutrition than the selected and cooked foods of higher culture, and attaining, as he does, an exceptional stature and strength, eats something more than the average ration; so that his ration of solid food may be lumped at 2.75 pounds (about 1,250 grams) daily, or 1,000

[1] Cf. Scatologic Rites of all Nations, by Captain John G. Bourke, 1891, especially chapter II, pp. 459-462. The Seri custom, resting as it does, on an ardent economic basis, tends to explain the scatophagy of the Hopi and other tribes described by Bourke.

1: McGee E-5 (1894-1895)1898 NU31 Seri NU31

262 [162] pounds (about 455 kilograms) yearly. The aggregate diet of the tribe may be estimated also by assuming the population to comprise 300 full eaters, besides, say, 50 nurslings negligible in the computation; so that the annual consumption of the tribe may be reckoned at 300,000 pounds (136,000 kilograms), or 150 tons, of solid food. Accordingly the several constituents may be estimated, as shown in the accompanying table, in percentages of the total, in pounds aggregate and apiece for the eaters, and (so far as practicable) in units both aggregate and apiece; the weights of units being roughly averaged at 100 pounds (45 kilograms) for turtles, 12½ pounds (5.6 kilograms) for large land game, 450 pounds (about 200 kilograms) for stock, and 2 ounces (56.7 grams) for tunas.

Estimated annual dietary of the Seri tribe

Constituents	Per cent	Quantity		Units	
		Aggregate	Apiece	Aggregate	Apiece
		Pounds	*Pounds*		
Turtles	25	75,000	250	750	⅓
Pelicans	5	15,000	50	1,200	4
Other water-fowl and eggs	8	24,000	80	.....	.....
Fish	15	45,000	150	.....	.....
Shellfish (except turtles)	10	30,000	100	.....	.....
Large land game	7	21,000	70	280	¼
Other land game	8	24,000	80	.....	.....
Stock	6	18,000	60	40	1/7
Tunas	9	27,000	90	216,000	720
Other vegetals	5	15,000	50	.....	.....
Miscellaneous	2	6,000	20	.....	.....
Total	100	300,000	1,000	.....	.....

Of course the constituents vary with temporary conditions; during "The Time of the Big Fish", practically all other sources of food were neglected until the providential supply was exhausted; during the decades of main subsistence on stolen stock it is probable that the consumption of other constituents, perhaps excepting the tunas, was proportionately reduced; and it is not improbable that during the warfare between Seri and Tepoka, described by Hardy, the consumption of turtles was materially diminished. Judging from the direct and indirect data and from general analogies, the least variable constituent is the cactus fruit, which probably fails but rarely and is so easily harvested as practically to supplant all other supplies during its season of a month or more. At the best, too, the quantitative estimates are nothing more than necessarily arbitrary approximations, based on incomplete inquiries and observations;[1] yet they are better than no estimates at all, and

[1] About 200 turtle-shells were noticed about the rancherias at Punta Tormenta and Bahía Kunkaak alone in 1895, all being less than two years old, as judged from the degree of weathering.

1: McGee E-5 (1894-1895)1898 NU31 Seri NU31

appear to form a fairly trustworthy basis for consideration of the Seri food-habits. 262

On reviewing the constituents it would appear that the Seri must be regarded as essentially a maritime people, in that about two-thirds of their food is derived from the sea; also that they must be deemed essentially carnivorous, since fully five-sixths of their diet (84 per cent plus a share of the miscellaneous—chiefly scatophagous—category) is animal. The tabulation does not show the relative proportions of the several constituents cooked and eaten raw, but the best available data indicate that fully three-fourths of the ordinary dietary, both animal and vegetal, is ingested in raw condition, and that the greater part of the remaining fourth is imperfectly cooked.

In recapitulating the devices for food-getting, it is found that nearly all of the more distinctive artifacts and crafts are either directly or indirectly connected with that primary activity of living things, food-conquest. Foremost among the distinctive artifacts of the Seri, in its relation to daily life and in its technical perfection, is the canteen-olla; probably second in importance, and also in technical perfection, is the balsa—whose functions, however, extend beyond simple food-getting; next comes the crude and simple, yet economically perfected, turtle-harpoon, with its variants in the form of arrow (with a function in warfare as well as in food-getting) and fire-drill; while the light basket-tray, although capable of carrying ten to twenty-five times its own weight, is perhaps the least perfect technically of the artifacts directly connected with sustentation. And it should be noted that the prevailing tools—hupf, ahst, multifunctional shell, and awl of mandible or bone or tooth—have either an immediate or a secondary connection with food-getting. 182

NAVIGATION

At first sight Seriland seems an abnormal habitat for a primitive people, since its land area is cleft in twain by a stormy strait—a strait whose terrors to the few Caucasian navigators who have reached its swirling currents are indicated by their appellations, "El Canal Peligroso de San Miguel"[1] and "El Infiernillo"; for such a stretch of troubled water is commonly a more serious bar to travel than any moderate land expanse. This intuitive notion of the effectiveness of a water barrier, and the correlative feeling of the incongruity of a land barrier insuperable for centuries, is well illustrated by prevailing opinion throughout northwestern Mexico; for it is commonly supposed in Sonora and neighboring states that Seriland is conterminous with Isla Tiburon, i. e., that the mainland portion of the province (including Sierra Seri with its flanking footslopes) lies beyond the diabolic channel. Yet longer scrutiny shows that the superficial impression merely mirrors Caucasian thought and fails to touch the essential conditions, 131

[1] Hardy, Travels, p. 291.

2: Kroeber E-5 (1930)1931 NU31 Seri NU31

The Seri "second harvest" of cactus seeds (p. 209), which Baegert and Clavigero also describe from Lower California (p. 211) is found also among the American Pima,[4] and is therefore likely to have prevailed as far as Cereus fruits were a principal food supply.

The ground-squirrel is not eaten by the Seri, the badger not by the Baja Californieños (p. 212).

McGee gives a valuable percentage estimate of Seri food composition: land game, large and small (including 6% of stolen stock), 21%; pelicans, other waterfowl, and eggs, 13; sea turtles, 25; fish, 15; shellfish, 10; cactus fruit, 9; other plants, 6; miscellaneous, 2; total animal, 84; maritime, nearly two-thirds. My impression is that clams, other mollusks, and crabs constitute more than a tenth of the total consumption. Clams especially can usually be obtained at low tide when wind and water prevent other food taking. I should also be inclined to raise the proportion of plant food, especially mesquite. The use of agave was almost certainly limited chiefly by the supply. Sealions, porpoises, and occasional whales could perhaps hardly be accounted for under the two percent of miscellaneous. On the other hand, deer are evidently taken only occasionally, and the figure for turtles seems too high, these animals being absent from Seri waters for months in the year and always free-swimming. McGee appears to have over-emphasized the importance of the turtle in Seri thought as well as life. I would incline to estimate the proportion of animal food in native times, before domestic animals could be preyed on, as rather under three-fourths of the total; of maritime, as perhaps three-fifths. Even these figures might be high for the bands primarily resident on the mainland, with free access to the mesquite thickets of the lower Sonora and Bacuachi (Bacavachi) courses, and the countless cactuses.

A double-bladed paddle pictured by the Dewey-Narragansett expedition of 1873 is reproduced by McGee (p. 219, fig. 28) without comment. This type of paddle is established for the Seri, Santa Barbara islanders, and San Francisco Bay Indians; then apparently is lacking until the Eskimo-Aleutian area. Among the Chumash it is native and associated with a plank-built canoe. On San Francisco Bay it was used with the rush balsa, and may or may not be due to Aleutian sea-otter hunters introduced by the Russians. It seems possible that the Seri and Chumash occurrences would prove connected by occasional use in Baja California, if we had fuller data, since some of the natives there went several leagues out into the open sea. We are so accustomed to think of the two-bladed paddle as an adjunct of the specialized kayak, that it too impresses as a complicated device, inappropriate with a simple raft. As a matter of fact, wherever scarcity of wood, or lack of skill and usage in working it,[5] resulted

[4] Russell, BAE-R 26:71, 1908.
[5] Cf. The Valley Nisenan, UC-PAAE, 24:285-290, 1929.

105 groups or clans between the waterholes and
182 their temporary dwellings by the sea, chasing for game or searching for cactus fruits, sleeping wherever weariness overtook them, or where the successful end of a hunt left them gorged and drowsy. Under a climate where frost is almost unknown they needed no protection except from the sun, and built no other dwellings than their brush-heap jacals (Fig. 3). Living in animal-like savagery, without commerce or industry, the Seri's every bodily character and function were directed toward the provision, day by day, of the food and water necessary for life.

312 Potable water, a commodity so abundant in most regions as to divert conscious attention from its paramount role in physiologic function and in industrial economy, attained in Seriland the primary place of importance because of its rarity. In that arid land it is scanty to the extreme. Two thirds of the meager supply is confined to a single rivulet in the interior of Tiburon Island (Fig. 4). Because of this and other widely separated aguajes within the island whose shores provided the greater part of their food resources, the Seris early found this island the most tolerable habitat in their desolate realm.

225 The most conspicuous single article in the
[262] dietary of the Seri, and undoubtedly that which first determined the location of his habitat, is the green sea turtle which is abundant throughout the Gulf of California, but particularly so in the narrow channel between Tiburon Island and the mainland. There the shallow lagoons abound with its marine grass food plant, and the sandy beaches provide optimum conditions for egg laying and hatching. In consequence of this natural provision for abundant food, easily obtained, perhaps half the aggregate life of the Seri tribe came to be spent within easy reach of the feeding and breeding grounds of the turtle.

[361] The most extensive and permanent of all Seri communities was established on the channel side of the island, just back of the lagoon in which the turtles feed and whose sands provided eggs and the succulent flesh
225 of newly-hatched turtle young. When fe-
501 males could not be captured at the laying grounds, the big chelonians were speared

[p. 194(B)]

[text continues on p 195(B)]

222 forests of giant cacti (Fig. 9) provide during this season an unlimited supply of "pitahayas" toward which the tribespeople customarily moved to accomplish the annual harvest. The fruits were readily knocked down by means of long poles and, when ripe, the spines were easily brushed off, leaving a luscious pulp as big as a fig. During the height of the season all the clans withdrew from the coast and gave their undivided attention to the collection and consumption of the cactus fruit, gorging tremendous quantities for weeks until waning supply and cloying appetite drove them back to the more severe hunt for turtle and pelican.

252 Perhaps the only germ of thriftiness in the
● 262 Seris is shown by a peculiar custom with
514 respect to the pitahayas. The fruits, eaten in such enormous quantity, were imperfectly digested, the hard-coated seeds particularly passing through the body unchanged. Using
[415] large seashells, the feces containing these
[251] seeds were collected and preserved with some care. Thus, when the harvest of fresh fruits was over, there remained a hoard of these dry, nutritious discharges which were ground on the stone abst, winnowed in a shallow basket and made into a meal to be eaten, either dry, as a watery atole, or mixed with turtle grease to form a thick paste.

614 Although the Seri's omnipresent problems of food-getting and of personal subsistence have been of particular interest, the lost social customs of the tribe deserve a moment's attention. Before the death of all
[161] but a few of the 2,000–3,000 Seris at the hands of invading Spaniard and Mexican, the tribe consisted of a number of conspicuous maternal clans, each of which was presided over by a zoic tutelary such as the Pelican, the Turtle, the Rattlesnake, or the Badger. The totemic symbols denoting the
302 various beast-gods and incidentally indicat-
386 ing the blood-carriers of clans dedicated to
614 them, consisted of elaborate designs painted upon the face (Fig. 10). In accord with their savagery in which the social organization was based on blood kinship reckoned in the female line, under ordinary circumstances, the faces only of the females were painted. Colored minerals pounded to powder afforded the pigments for the paint-

[p. 201(A)]

3:Davis & Dawson E-5 (1822-1940) 1945
NU31 Seri NU31

262
511
[161]

Sea turtle was still the staple meat, and with better boats and improved tools and tackle borrowed from the Mexicans, the living was becoming considerably less harsh along the shores. They then had nine boats for some two hundred people. One good boat could secure a living for five families, and they had well improved this minimum standard of living.

372
773

The origin of the use of fire among the Seri's is unknown, but they have their own story of it. One day Chico Romero, present chief of the Seris (Fig. 19), made a fire drill out of a piece of dry driftwood and showed how to make a fire by turning the stick between the hands. In three or four minutes the fine dust became a glowing punk which, with the aid of some dry grass and the wind, was quickly fanned into a flame. He was then induced to tell the legend. He looked about and pointed to a little green and blue-bodied fly and said: "The gods sent this fly down from the sky to show us how to make fire. Notice when it lands. Did you not see

[534]
[535]

FIG. 18. THE NATIVE DANCE
IS DONE ON TOP OF A TURTLE SHELL TO THE BEAT OF A BOW STRING BEING STRUCK WHILE THE BOW IS HELD AGAINST TWO INVERTED BASKETS ON SAND.

[p. 265 (B)]

3:Davis & Dawson E-5 (1922-1960) 1965
NU31 Seri NU31

621 are four or five hundred people there, more during the peak of the season, and some fifty or more wattle and daub shacks arranged without plan or order, facing at every angle, but all near the beach on which the fishing boats land and are pulled up on shore. Refrigerated trucks carry fifteen to twenty-five tons of fish away daily during the height of the season, mostly the huge endemic totuava (Fig. 21). These great fish are dragged from the boats and lined up on the shore, where the heads are chopped off and the entrails are pulled out and left to be carried away by the tides or consumed by hundreds of [131] scavenger gulls of the beach. A quarter mile north of Kino is the present-day Seri village where nearly all the Seris now live semi-permanently because of the easy money and [439] living. They have their own boats, fish a little for profit, and also bake the discarded ●[262] fish heads for food. The Seri dwellings are now scarcely inferior to many of the wattle 342 and daub shacks of the Mexicans. Indeed, many of the Mexican shacks are built by [439] Seris in exchange for manta cloth or food.

[p. 268(B)]

4:Malkin E-S (1953-1955) 1956 NU31 Seri NU31

SERI ETHNOZOOLOGY: A PRELIMINARY REPORT[1]

Berys Malkin

121 In this paper I shall attempt to summarize briefly some of the possibilities inherent in ethnozoological studies. Ethnozoologies, published so far, have either stressed only the economic or medicinal uses of animals or have just included them as part and parcel of mythology and religion. The emphasis here, on the other hand, is primarily on the aboriginal knowledge of natural history and naturalistic concepts about animals. A comparison with the actual situation in nature will be frequently made in order to test the acuteness of the native observation.

This account is part of a wider comparative study in ethnozoology of several aboriginal groups. Additional field work has recently been completed among two other tribes, the Cora in Nayarit, Mexico, and the Sumu in northern Nicaragua.

Ethnozoological studies of such scope require much more extensive background in natural history than anthropologists or even zoologists today are likely to have. One has to deal with very diverse groups of animals and I have found my own knowledge of the subject repeatedly inadequate on many occasions. It is hoped that a study of this sort will attract individuals who will cover more satisfactorily the entire range of the animal kingdom.

Economic Uses

825 Almost all major classes of animals, with the exception of the insects,
262 are used for food. Only a very limited number of species serve other purposes
439 such as trade with the Mexicans. Among these are various species of large fishes, sea-turtles and a number of shells. None are used for the basic non-dietary products such as utensils, clothing, and other items of the material culture, for these are purchased ready-made in the local Mexican "tiendas" (small general store).

925 As a major source of income for their livelihood the Seris depend mainly
[439] upon a few commercially significant species of large fish and sea-turtles. Yet they do exploit a wide range of the animal environment as a source of additional food. Of the total number of species of animals[2] upon which information has been available, 45% were reported as economically exploited. The table below gives the breakdown of the major groups.

[p. 73]

Class	Species Reported	Species Exploited	Percentages
Mammals	21	9	46
Birds	24	6	25
Reptiles and Amphibians	25	11	44
Fish	44	23	52
Molluscs	36	21	58
Crustaceans	10	2	20
Total:	160	72	45

These figures show clearly the dependence of the Seris on marine life for a major source of their diet. Today, pinta, baya, culon and sardinara are their primary source of income with meat and sea-turtles ranking second in importance. Several species of clams, limpets and gastropods supplement this diet.

All other animals represent only incidental additions to the menu. During the last war, sharks and mantas were hunted extensively for their liver, then a source of vitamin D. But since the war, the demand for shark liver has declined and because of this, a considerable income for the Seris has been lost. Shark and manta fishing have been abandoned for these fish were taken only for the commercially profitable liver and not for their flesh.

Fishing and Hunting

Seri fishing techniques are simple. In the past they used double-pronged spears and for the larger fish, harpoons. Today the spears are employed chiefly in fishing while the harpoons are reserved exclusively for sea-turtles. Hook and line fishing was introduced after 1930, as Kroeber (1931) saw none during his visit to Kino in 1930, and it is now the standard method of fishing. An abortive and unsuccessful attempt was made several years ago with net fishing. Another change has occurred within the past fifty years. The old balsas have been replaced by flat-bottomed plank boats outfitted with five-horsepower motors or sails. These motors, incidentally, are leased from the Mexican fish traders because none of the Seris are rich enough to own one.

Bait is obtained by dynamiting schools of small fish in coastal waters or by collecting them at low tide in the tidal pools and from under rocks. Fishing usually begins at dawn and lasts until noon when, as a rule, all of the "pangas", as the boats are called, return to Desemboque. In stormy weather no fishing expeditions are made and when this occurs, starvation becomes a real menace. Harpooning of sea-turtles takes place far out in the Gulf. It is done only at night in exceptionally calm weather by the light of torches or Coleman lanterns.

Hunting as it is done today has changed from the time of McGee's visit in 1894-95. The bow and arrow has disappeared completely except for a crude and diminutive form used as a toy by small boys. Iron spears once used in shark and manta hunting are now carried primarily as a weapon against the numerous and much feared rattlesnakes. They are said to be used occasionally in the peccary hunt. Old .22s or 30/30 rifles are owned by several of the men, some of whom specialize in hunting.

224 Game pursuit is usually done on foot, mostly in the winter and very little in the summer. The intense heat of the desert in the summer makes hunting unattractive. The most frequent trophies are the Sonoran bighorn, peccary, cottontail and jack-rabbits. Sometimes, semi-wild burros, running loose on the adjacent extensive Mexican "rancherias", are poached for meat. The peccary is the only animal hunted with the aid of dogs. Large rodents are dispatched by [223 sling-shot, stick, stone, or shot with a .22 caliber rifle. Birds, such as sea-
417] gulls, ducks and pelicans, are clubbed, stoned or shot with a small caliber rifle.

462 While fishing and hunting are primarily men's occupations, the gathering
224 of the terrestrial and marine animals is almost exclusively women's work.
226 Rattlesnakes and other reptiles are often killed and brought to the encampments by the women from their morning trek into the desert after firewood and fruit. Small fish and marine invertebrates in the tidal pools are collected by women, aided by children of both sexes.

252 Preparation of meat is quite simple. It is either boiled in hot water with salt added as the only seasoning or else roasted whole, if small enough, over an
[263] open fire with or without a grill. The use of spices such as tomato sauce, chili, peppers, and the like, depend upon the tastes of the individuals and also upon the availability of money.

225 In individual competence as hunters or fishermen the men show a great deal
224 of variability. Some excel in fishing while others do so in hunting. Hand in
226 hand with this, goes the degree of knowledge of the local natural history and, as expected, the best fishermen lead in the knowledge of fishes while the best hunters possess the most extensive knowledge of terrestrial animals and insects. It has also been observed that boys were far ahead of adults in their knowledge of inconspicuous or otherwise commercially unimportant creatures such as insects, obscure marine invertebrates and small fishes. Interest in the commercially or otherwise economically important forms of animals unquestionably becomes overwhelming in adult life while much of the natural history lore learned in youth is forgotten.

Food Preferences and Taboos

262 A number of animals were reported as being a part of their diet in the past but which were not used at the present time. Several species of shells collected from kitchen middens along the coast were thus identified. In some instances it has been denied that a certain animal was used for food; yet, later when such a beast was brought to the camp, it would be added to the menu. Undoubtedly, some of the species were held in low esteem as food and the Seris preferred not to admit eating them.

Large fishes, especially pinta and baya, sea-turtles, and the very large chuckawalla lizard, which is brought back from rare expeditions to San Esteban Island, are the preferred cuisine. Cochi fish, also called puercos, are disdained. Large catches of these were frequently brought in from the sea, only to be unceremoniously dumped on the beach and left to the dogs and the vultures. But when other fish were scarce, the puercos were eaten. Pelicans, once an

262 important source of meat for the Seris, and sea-gulls are occasionally killed and likewise abandoned, except when famine threatens. The above examples most likely apply to other varieties of animals as well.

No specific food taboos were discovered in the course of field work except the unexplained reluctance to eat certain species. McGee (1898) reports a taboo on eating sea-lions but my informants asserted that these mammals were hunted in the past for both their flesh and hide. All of my informants denied that the Seris eat cougars, and this abhorrance has been confirmed by the Mexicans. Yet the Mexicans themselves do hunt and eat these big cats. McGee
§25 (1898:196, 202) again casually mentions cougars and jaguars as being hunted by by the Indians but gives no evidence for this. It should be mentioned that only a few Seris know what sort of an animal the jaguar is, and these know it only from hearsay as "huge animal inhabiting the mountains far in the interior". There are occasionally some migrant jaguars in Seri territory.

Pets

231 The Seris have only a limited variety of pets. Dogs are very numerous, each family keeping many of them. Although they maintain that the dogs are acquired in order to keep the coyotes away from the camps, there is nothing in their camps that a coyote would want to steal. There are a few cats and several species of wild desert doves which are often caged. Wild animals in captivity are, as a rule, those which accidentally come into the hands of the Indians. On one occasion a badger was kept tied to a house post for a couple of weeks and fed on fish heads, snakes, lizards and water until one night when it made its escape.

§57 Of the insects, only the singing male Cicadas are captured by the roving Seri boys. These are tied to a long thread and having their fore-wings partly clipped, they are released into the air like kites. Local Mexicans also provide a similar kind of toy for their children.

Classification of Animals

§15 Seri taxonomic notions of the animal world are vague and indistinct. No conscious classification exists and perhaps none should be expected of non-literate people. But there is a random association of animals based on the external similarities of form, habits and habitat. A clear distinction is made between plants and animals. Quite obscure animals, for example, the Echinoderms, Holothurians, Coelenterates or barnacles, are classed as animals and not as plants. It seems that voluntary movement is used here to distinguish the two categories. Thus, informants insisted that sea-anemones and jelly-fish are animals and not plants. One difficulty arises in the case of sessile barnacles. It is hard to account why those growing on the sea-turtles are classified as animals and are called "turtle fleas".

In the assemblage of major animals, the mammals form one group and birds and fish others. Since general similarity of form and not real structural affinities are the primary reason for these associations, the bats "are not birds, but are probably mammals because they have fur". Thus, sharks and

825 other snakes are also viewed as venomous but are claimed to be of mild disposition and do not bite people.

Among the lizards, curiously, the one feared most is not the highly poisonous Gila Monster, but the harmless little gekko, Coelonyx variegatus sonorensis, which lives in fallen and dried-up saguaros. The informants could not even be induced to touch specimens killed in alcohol. It is believed [753] that this creature could kill humans either by contact or by allowing them to inhale its vapors which cause a fatal lung illness. This little lizard is reminiscent of the European salamander in some ways. The Mexicans call it [771] locally "salamancesa", and attribute to it the same unpleasant traits which the Seris do. Since this little lizard does resemble the European salamander and the beliefs about it are quite similar to those in European folklore, it is possible that here is a case of a transfer of this folklore upon an animal of a different kind. These beliefs eventually perhaps diffused to the Seris.

A small desert night lizard, Xantusia vigilis, is also very much feared and is frequently confused with the gekko. It lives in an identical habitat. A toad, Bufo alvarius, is said to bite with its tongue and is supposed to be able to inject venom with it. Its blood and "milk" are also very toxic.

Several of the arthropods are believed to be dangerous. The Seris claim that the blood sucking cone-nosed beetle, Triatoma rubida, stings with its mouth parts and also causes an illness called syxhil i te kapxp, which can be fatal to children. This bug actually is a vector of the Chagas disease and its repeated bites may cause a sensitization to them. But in this case it is impossible to tell which is the situation without a clinical analysis. Scorpions, which sting with their tails, are considered to be very dangerous. The Black Widow spider, which is very numerous in the locality, is also viewed as very toxic and is said to be sometimes fatal, although a few days' illness is all that its bite usually causes. The tarantula spider also bites but its venom is never fatal. The Sun spiders, Solifugida, are venomous but their venom supposedly kills horses but not people. All of these spiders and their relatives, according to the informants, sting with the rear end of their body in wasp-like fashion. No medicant is applied on the bite, nature being allowed to take its own course in the recovery.

Concerning other animals, the sting rays are much feared because of the venom in their thorns and their ability to inflict a nasty wound. The bats, according to some informants, can cause disintegration of the body by spitting on it and they also have venom in their tongues, although this belief was not shared by one of the more sophisticated informants.

Only a few animals are considered to be dangerous to eat owing to their toxicity. The toad is one and a little fish, Sphaeroides annulatus, is another. [262] Of this fish it is said that "one hundred years ago, a man ate one; he died", hence the avoidance. However, rattlesnakes are eaten with relish; only the head and the part of the body where venom is believed to be located being discarded.

171 825 The above discussion suggested some of the differences in the attitudes toward animals between the Mexicans and the Seris. While the former fear many,

5:Dawson N-5 (1940) 1944 NU31 Seri NU31

DESERT
PLANT LIFE

SIXTEENTH YEAR NUMBER 9

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SOME ETHNOBOTANICAL NOTES ON THE SERI INDIANS

If the natural resources of a region may be said to reflect the degree of cultural and social development of its aboriginal people, we may easily understand why the Seris of Sonora, now approaching extinction and with much modified habits and culture, are considered the most primitive and savage of American Indians. Certainly the arid coast of Sonora, destitute of water but for a few widely separated, stagnant holes, with a dry, rocky soil habitable only by the most frugal and thorny of desert vegetation, presents little in the way of resources to a native people. It was, indeed, only along the ocean shore that the Seris found animal food sufficient to sustain them, principally, the sea turtle and the pelican. This food source proved adequate to support a tribe of some 2000 in pre-Columbian times, but the limited habitat of the pelican and turtle brought about extreme isolation of the people. Thirty-mile-long Tiburon Island became their principal home, separated from the mainland by the narrow but tempestuous channel, El Infiernillo, across which they frequently voyaged in their buoyant balsas to search out vegetal supplements to their monotonous sea food diet. It is this use of vegetable materials, not only as food but in other phases of the domestic economy of these people in earlier times, with which these notes are particularly concerned.

Primary occupation of the Seris aside from their continual movement to and from the water holes was, necessarily, their search for food, for they cultivated nothing and conserved little. Fish were exceedingly abundant in the waters around their island, but their very limited tool sense, providing them with almost no fishing devices, excluded much of this food from their diet. Clams and other shellfish were to be had, but it was the abundant green sea turtle, feeding upon luxuriant growths of marine grass, *Ruppia maritima*, in the shallow, sandy lagoons along El Infiernillo, that provided their meat staple. The turtles could be captured with ease during egg laying season as they crawled over the beach, but at other times they had to be speared from a watercraft. No sizable timber grows in Seriland and before the advent of flotsam boards and hoop-iron it would have strained the

396 ingenuity of a modern shipbuilder to have constructed a boat. These simple, desert people, however, through centuries of struggle for life in their desolate realm had learned to use every natural material available to them, however laborious the tasks and inefficient the products. The carrizal reed, [824] *Phragmites communis*, grows about the few permanent water holes of Seriland, and from countless numbers of these slender, buoyant canes they built their watercraft. The reeds were stripped of leaves and gathered in long bundles, bound together and gradually augmented by more and more interlaced canes until a bundle 18 to 30 feet long and 1½ feet in diameter, tapering at both ends, was made. Three of these were then bound together with cords of fiber or human hair, making a maneuverable one or two man raft, easily transported to the shores.

283 The mesquite tree, *Prosopis juliflora*, provided fiber for cords. The flexi- [824] ble outer tissues of the roots were stripped off, soaked and progressively pounded, split and worked between hand and mouth until very slender, fibrous threads were obtained which were then twisted into cords. In some [286] cases a coarse, rough fabric was woven from these fibers, but most garments were made of pelican skins. The strips of workable mesquite root or sometimes yucca fiber were also used in making doughnut-shaped head pads which aided in balancing the capacitous earthen water jars as they were [482] carried on the heads of the women over rough and stony trails from water hole to camp site.

262 While occupying the turtle fishing camps on El Infiernillo during the good 824 season, vegetable supplements to the fishy diet were few. Every nourishing seed or woody fruit yielded by the desert was carefully gathered; even the tiny seeds of the sea grass, *Ruppia*, were sorted from beach drift and made [824] into meal. Never did the Seris learn to cultivate any crop or domesticate any [231] animals other than the half wild coyote dogs that lived in mutual toleration with them. Even had they done so, their success in the barren, waterless land would have been small.

222 Sterile as is the Seri's hinterland, for a time each summer the thorny 262 plants with which it is so profusely stocked ripen an abundant crop of fruit. The cacti in particular yield a wonderful harvest of luscious and succulent fruits, and toward this fortuitous supply the Seris were accustomed to move in June and July. The foothills of Sierra Seri on the mainland are adorned with great numbers of giant cacti, *Pachycereus Pringlei*, *Carnegiea gigantea* [824] and *Lemaireocereus Thurberi* from which the luscious pitahayas were readily knocked down when ripe. The Indians wandered into the cactus forest and after a simple ritual marking the beginning of the feast, proceeded to gorge themselves for weeks on the succulent fruit until waning supply and cloying appetite drove them back to more severe food-getting activity by 252 the sea. They did not customarily find it necessary to leave the cactus forest, 262 however, as soon as the supply of fruits was no longer sufficient, for by the 514 time the fruiting season was ended they had provided themselves with a second harvest. The pitahayas, gorged in such tremendous quantity throughout the season, were very imperfectly digested; the miriads of hard seeds, particularly, passed through the system unchanged and with the preservation of these in mind the Indians carefully collected with the aid of large sea 252 shells all such seedy discharges and let them dry in the desert sun. Thus, as the supply of fresh fruit faded they proceeded to the use of this hoard

252 of nutritious material which was ground to powder on their stone ahsts, winnowed in shallow baskets and made into a meal or paste.

764 824 The abundant cacti of many species served several other functions in the domestic economy of the Seris. The thorny cholla whose insipid fruits were not fit to eat and whose spines were a constant threat to the unprotected bodies of the Seris, found one use, nevertheless, in the burial procedure. After a body was partly covered with earth in the three foot deep grave, it was densely overlaid with chollas before leveling, to discourage the coyotes from digging for the body.

396 824 The dry skeletons of the giant cacti provided the long, cylindrical poles used in knocking off ripe pitahayas as well as in all other instances in which a straight, slender pole was needed. Since the advent of the open boat in modern times, the cactus skeleton has come in for a new use, for after trituration between stone ahst and hupf, it was found to yield a satisfactory caulking compound when mixed with sea-lion oil.

312 824 The barrel cacti, *Ferocactus Wislizenii* and *F. Coulteri*, though ordinarily abundant on the Sonoran desert are rare in Seriland and practically absent from Isla Tiburon where they may easily have been exterminated by the improvident Seris during their centuries of occupancy on account of their recognized value as water providers on the wastelands over which the Seris so frequently ventured.

342 [132] 824 These Indians found housing no problem, for, living under a climate in which frost is rare and rain infrequent, they found little need for shelters except for protection against the blazing desert sun. Camps that were occupied for more than a day or two, however, usually saw the appearance of a group of crude sun shelters. These were usually made of long, flexible ocotillo branches, *Fouquieria splendens*, stuck in the sand and fashioned into an arched framework over which a more or less complete covering of brush was piled. If, by the sea, a windbreak were desired, the brush top and siding were usually augmented by the addition of several empty turtle shells.

262 824 On the delta plain of the Rio Sonora, the mesquite, *Prosopis juliflora*, grows in remarkable luxuriance, these gnarled, spiny trees forming an almost continuous open forest 20-40 feet high. Its fruit, consisting of small, hard beans borne in slender, woody pods forms a concentrated, starchy food that the Seris found highly nutritious if not appetizing. In late summer when all fresh vegetable food had withered and disappeared, provided the turtle fisheries had not yet attracted them back to their island, they often spent [252] some weeks gathering the beans and grinding them into a meal which was eaten as a watery atole or as a paste mixed with sea-lion oil. The more straggly and thorny cat's claw mesquite, *Acacia Greggii*, and the ironwood, *Olneya tesota*, also yielded woody beans in limited quantity.

[918] In the deeper gorges of the mountains the Seris found *Guaiacum Coulteri* yielding a berry of medicinal properties and also *Jacquinia pungens* which [334] produced a nut, edible when not quite ripe, and forming a favorite rattlebead when dry.

Along sandy washes, particularly on the lower flood plain of the llano grows a low, shrubby weed, *Hymenoclea monogyra*. Although during times of drought it shrinks to stunted tussocks, after periods of heavy rain its flourishing fens produce abundant seeds eaten both by the beasts of the plain and formerly by the Seris.

265 [971] Before the advent of the tin can and the cardboard carton, basketry was an important handicraft among these Indians

[TEXT CONTINUES ON P. 138--ANALYST]

POPULATION ABLE TO WORK
(between 11 and 65 years)

Men, 74 or 69% of the masculine population. 464
Women, 76 or 70% of the feminine population. 162
462

We can add that, at least as far as the male population is concerned, the figure of 69% with a potential work capacity is equivalent, in general terms, to the percentage of the population economically active, since one of the singular characteristics of the Seri population is the fact that they constitute a community fully occupied: all the men of working age have a place set aside in the fishing activities; this is an advantageous position for increasing economic development of the tribe. With relation to the women the situation is not the same, since the majority of girls of marriageable age carry on very few productive activities; it could be said that economic responsibility begins with matrimony. [226]

If it is true that all the Seri men are fishermen, it is also true that there is the beginning of some specialization of jobs, which are carried on complementing or as an accessory to the principal occupation. Thus we have among the men: 463 462 162

Carpenters, constructors of *piraguas* (a kind of canoe)	6
Medicine men	14
Farmers	2

And among the women:

Seamstresses	4
Farmers	1
Midwives	22

The relatively high number of medicine men and midwives should not be surprising; Seri popular medicine is very well known and depends principally on magical propitiation and since the magic powers are acquired in a variety of ways, including dreams, and the healing rites are, on the other hand, very simple, it is not strange that medicine men should abound. As for the midwives, it can be said that every woman who has undergone the experience of childbirth feels herself able to help at a birth; nevertheless, it is said that the more experienced women are those best able to take care of those giving birth. 755 756 944

Problems which should be attended to

In addition to the sanitary problem mentioned above, mention should also be made of the problem of agriculture, linked with the necessity for supplying food to an Indian population which since economically it depends principally on fishing, needs to complement its diet with agricultural products to achieve a better one. In close relation 185 262 241 423

8: Ascher E-5 (1960) 1962 NU31 Seri NU31

McGee (1898:214)

estimated that maritime resources provided two-thirds of the Seri diet. Kroeber (1931: 20), approximately 30 years later, estimated the proportion at about three-fifths. In the winter of 1960, 30 years after Kroeber's visit, the Seri were obtaining at least three-fifths of their food from the sea.

In pursuit of their main source of subsistence, the Seri travel up and down the narrow coastal band. In the winter of 1960 they were occupying one temporary camp toward the southern end of the band and a permanent camp at the northern extreme. Seri women and children gather mollusks; fishing is a male occupation. In addition to gathering and fishing for their own needs, the Seri dispose of a portion of their catch on the commercial market. This enterprise began about 1930, and was encouraged by the establishment, in 1958, of the Sociedad Cooperative de Produccion Pesquera Seri with the cooperation of the Mexican government.

The Pacific green turtle constitutes the largest single item in the Seri diet for at least six months of the year—from January to June—and it is also caught occasionally at other seasons. In 1896 McGee estimated that it provided 25 per cent of the total food supply. Emphasizing the intimate ecological relationship between the Seri and the turtle, McGee (1898: 186-187) wrote:

> ... perhaps half of the aggregate life of the tribe is spent within easy reach of its [the turtle's] feeding and breeding grounds, and tribesman and turtle have entered into an inimical communality something like that of the Siouan Indian and buffalo in olden time. ...

Kroeber (1931: 20) believed that McGee stressed the Seri-turtle relationship too strongly and overestimated its contribution to the diet. McGee (1898: 187), in support of the importance of the turtle to the Seri, points to the fact that the turtle carapace is used for, among other things, a house covering and buckler, a cradle, a coffin, and footgear. The carapace is currently used for supporting and roofing houses and as a starvation food. The contribution of the turtle to the diet varies from year to year, but observations made in 1960 suggest a range of from 15 to 20 per cent as a reasonable estimate.

Seri men fish for turtle from boats, which are manned by two or three men and are propelled by oars, sails, outboard engines, or any combination of the three. The boats operate either individually or in groups. The men fish by night or day, depending on the weather and sea conditions. When they fish at night, they use a kerosene lamp to attract turtles to the surface. The principal implement is the harpoon.

The harpoon tackle of the Seri is illustrated in Figure 1. It consists of a foreshaft (c-h), a mainshaft (j-k), and an extension cord (i). The component parts of the foreshaft are a projectile point (c), a gasket (d), a wrapping cord (f), a hafting base (g), and a lead cord (e and h). In preparation for turtle fishing, the hafting base (g) is plugged into the socket (j) on the main shaft (k), and the extension cord (i) is looped through the lead cord (h).

9:Malkin E-5 (1953-1955)1962 NU31 Seri NU31

II

OUTLINE OF SERI CULTURE

161 At the moment their number should have increased again, after a disastrous epidemic in the 164 spring of 1955.

Biological Background

142 The Seris are somewhat atypical among the peoples of the general area in that they represent a very slender, sinewy, tall type. This is true of both men and women. This physical type in general is apt to be associated with the desert habitat and the Seris answer the requirements very well. As shall be seen, their economy also repre-433 sents characteristic adaptation to the desert conditions of pre-agricultural people.

Economy

The Seris readily fell into the category of the pre-agricultural hunters and gatherers with one variant, dependence on the produce of the sea, whether marine turtles, fish or littoral invertebrates.

[241] Here the Seri provide another exception for the region. They are the only group that never had any agriculture. McGee has pointed out their lack of agricultural sense and this has also been mentioned by Kroeber and by incidental Mexican visitors. Of late years, some efforts have been made by the Mexican government and the Amer-[648] ican Friends' Service Committee to persuade them toward agriculture, but to no avail. The Seris [464] occasionally hire out to the surrounding Mexican or American rancher-farmers but grow restless after a few days of cotton picking and retire, with their advanced pay lost to the employer. On the other hand, efforts to teach them related practices, well digging for example, also failed to interest them. To this day they remain much in the original pattern of economy.

262 McGee (1898:214) who had a chance to observe 114 them from the first hand and who also had access to valuable information from the outsiders gives the following figures for their diet:

land game, large and small (incl. stolen stock)	21%
waterfowl and eggs, incl. pelican	13
sea-turtles	25
fish	15
shellfish	10
cactus fruit	9
other plants	6
miscellaneous	2
total animal 84%	marine 65%

Kroeber (1930:20) questions these figures and thinks that shellfish represents greater percentage than McGee indicated. He also thinks the use of turtles had been exaggerated. He figures the dependence on the animal diet as 75% and on marine 60% but he suspects that these figures are too high for a band with ready access to countless cacti and mesquite.

[P.68]

262 178 I have no idea, of course, what the diet may have been in the past since only archaeology can suggest the answer. But I am sure that there has been much change in their diet since Kroeber saw them, not in the basic pattern but in the composition. With the introduction of hook and line [177] fishing, the percentages swung in favor of fish, [226] while decimation of the marine turtle cut down the importance of this animal. Simultaneously, 262 the Seris now have available manufactured or [177] imported Mexican food items: flour, sugar, rice, [439] potato (when no one is looking; potatoes are not supposed to be sold to them because they make *tepache* from them which makes them grossly fish in cans, coffee and tea. Dependence on the products of the desert has dwindled. Rattlesnakes, desert turtles and chuckawalla still find their way to the Seri kitchen but not too frequently. Pelican and sea gull will be eaten only when rough times beset them but are disdainfully refused at other times. My own estimates, impressions not supported by any attempt to measure their diet, are as follows:

fish	50+%
turtle	8-
Mexican import	20
desert plant	7
desert land animals incl. stock	5
shellfish	10
total marine origin	68+
total desert origin	12
imported origin	20

224 178 [685] Another important change in the pattern is the unquestionable decrease of hunting (other than marine animals) in Seri life, as of the domestic stock stealing, the place of which has been taken in a way by the dependence on manufactured foods and items. Hunting nowadays is done rarely and only few individuals will devote some months out of the year to it. Stealing of domestic stock [685] has ceased for practical purposes, since in the past it lead to virtual extermination of these Indians. Occasionally the Seri kill off a semi-wild burro, herds of which run about loose in the desert or they'll get leavings off one, hunted down by a Mexican trader or fishermen.

411 224 [857] The Seris' basic tools of game procurement have changed. Bow and arrow were still much in evidence and in use in McGee's time but seem to have gone out soon after. Kroeber did not mention them and by now they are quite extinct, except as clumsy toys little boys use to play with. The throwing stick is still used on rabbits—any stick one can scrounge on a moment's notice will do for the purpose. If any traps or falls had been used we do not know of them. Accidental stones may be used much in the same way as throwing sticks. In general, various sorts of fire arms, mostly .22 and .38 [177] caliber are owned by a good many Seri men and have replaced other weapons in the terrestrial hunt.

226 411 177 More important are changes in the fishing procedures. Formerly spear and detachable harpoon were their only marine weapons. Even as late as 1930, during Kroeber's visit, the Seris made no use of hook and line. But now, hook and line of

[P. 7A]

[apparently a line of type has been omitted here-Analyst]

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III

MAMMALS

Scientific	Common Name
Antrozous pallidus	Pallid bat
Bassariscus astutus	Ringtail cat (Cacomistle)
Spilogale gracilis	Spotted skunk
Taxidea taxus	Badger
Urocyon cinereoargenteus or *Vulpes macrotis*	Grey fox or kit fox
Canis latrans	Coyote
Felis concolor	Mountain Lion.
Felis onca	Jaguar
Felis eyra	Juguarundi
Zalophus californianus	California sea lion
Dipodomys sp.?	Kangaroo rat
Erethizon dorsatum	Porcupine
Lepus californicus	Blacktailed rabbit
Sylvilagus auduboni	Desert cottontail
Pecari angulatus	Peccary
Odocoileus hemionus	Mule Deer
Ovis canadensis	Bighorn
Eschrichtius glaucus	California grey whale
Orcinus rectipinna	Killer whale
Tursiops gillii	Bottlenosed dolphin

Identification here has been obtained largely with an aid of field guides or by mentioning a colloquial local name of the mammal in Spanish. All these were later checked by Dr. Robert T. Orr of the California Academy of Sciences. While there is no doubt of the identity of the most common forms, such as peccary or sea-lion, there are also several of the identifications which can't be certain either because of inadequate line drawings or lack of specimens, either alive at a distance or even parts of them. In this somewhat dubious category are Ringtail cat, Jaguarundi and the Killer whale.

On the other hand, there is no doubt as to the identity of the following: Pacific pale bat, badger, bighorn, coyote, kangaroo rat, blacktail rabbit, cottontail jackrabbit, deer and dolphin. Live, free or captive individuals, or part of them, such as horns, hide or skulls were available.

Economic Uses

Food: Only 6 out of 21 species for which information is available are used today as food. Three more were mentioned as "eaten in the past" and one more as "possibly eaten in the past." Since the oldest of the informants who provided this data, Miguel Barnett, is a man in his fifties (and it is he who talked most often about the animals "eaten in the past but not now") we may surmise that these were part of the Seri diet 25-45 years ago, that is between 1910-1930.

Five species are important as a supplementary source of food: the bighorn, the deer, peccary and both species of rabbits. Some, the deer especially, are considered to be delicacies. The sixth species is the badger but it appears neither important nor frequently killed. I saw one badger captured by José Juan Moreno. The animal was tied to the pole, and kept as a pet, fed on fish, snake and

9:Malkin E-5 (1953-1955)1962 NU31 Seri NU31

III

MAMMALS

water for a week until it escaped. There was no intent to do away with it and serve it up for dinner later on.

The 3 species reported as eaten in the past are kangaroo rat, sea lion and the ringtail cat or cácomistle. Of these the little rodent had been supposedly "boiled in hot water with salt" which method of preparation may indicate that it happens quite recently yet. It is quite possible that in times of famine this animal is still used. The sea lion has been reported as "eaten once a long time ago. All of it. But not now. Its hide was once sold also but now it isn't used at all." This conflicts with McGee's statement (McGee, 189:202) that there was a taboo on eating sea lions among the Seris and there is no way to reconcile the information.

McGee's report may be as truthful as are the uncertain and hazy comments of the present day Indians.

On the other hand, the cougar belongs to a very dubious category, unless we can rely on Miguel Barnett's memory. All 4 of the younger informants emphatically deny that the cougar has ever been hunted for meat. But Miguel Barnett claimed that this has been done in the past, although he could not tell how long ago. Kroeber says nothing about this animal and this makes it difficult to date the events. At the time of Kroeber's visit, Miguel was at least 25 years old and the cougar could have been hunted either then or earlier. But today the Seris do not eat the flesh of the big cat and their abhorrence of it has been confirmed by the Mexicans to whom I talked about the subject, and who relish cougars' meat. This apparent distaste for the *el tigre's* flesh may well be a recent development quite unconnected with the lack of weapons. McGee (1894: *loc. cit.*) casually mentions that the Seris hunt both cougars and the jaguars but cites no evidence for it. Yet in his time Seris' almost only weapons were the bow and arrow and a lance which today has been replaced by firearms. I am unable to explain this contradictory behaviour.

Finally, there is the Ringtail cat or cácomistle. Although this beast has been reported as part of the diet, the information isn't too reliable. I had no way of checking whether this was the animal the Indians had in mind. Their description of it seemed to answer some other unspecified animal and their answers were confused. The fact is that the Ringtail cat does occur in the Seri territory and they are surely familiar with it.

Of the remaining 11 species none were ever mentioned by any of the informants as having been ever eaten. Their denial of eating the coyotes were most vehement. Coyote figures out probably

Coyote figures out probably

as an important and perhaps disreputable figure in the mythology although nothing but scraps and bits of information suggest this. It is possible that there is actually a taboo on eating this animal or perhaps it is so disreputable that eating its flesh would put a gourmant in an inferior position.

How important is the Seri mammalian diet is hard to tell. It certainly looms more heavily during the winter, because in the cool season hunting is easier than during the heat of the summer and in fact this is when most of it is done by the ardent hunters. Too, winter subjects the Seris to greater hazards and is apt to increase their dependence on the desert resources over that during the summer, even if these resources are scantier at that time.

To all of these animals one should add the semi-wild burros running about the extensive Mexican rancherias. The Indians poach on them frequently using their fire arms, usually the .22 caliber rifles. In any case, it appears that during the summer when the field work was carried out, the mammalian diet figures quite lightly on the Seri table.

Food preparation: Very little is done in the preparation of the mammalian meat. All that I could observe was the boiling of it in hot water spiced with salt. The Indians were saying that in order to have the meat of a peccary, deer or bighorn ready to eat one must boil it 2-3 hours. The same procedure is followed with the meat of the burros. In contrast to this, as shall be seen later, fish are boiled as well as roasted while the turtles are also dried and salted. Preparation of meat is done by women, certainly at least in the encampments when they are present.

Food preferences: Some of the Seri food preferences have already been mentioned. At the top of the list as the desirables are the peccary, the deer, the bighorn and the blacktail jackrabbit; at the bottom is the badger, whose meat "is not much good." There is also preference by sex. Females of both the bighorn and peccary are preferred over the males "because they do not have the bad odor like the males." This sort of favoritism also occurs among the Mexicans. However, the Indians did not elaborate beyond this point.

Other economic uses: Apart from meat, hides are also used. The hides of the deer, bighorn and peccary had been used for sleeping mats although this matter has been expressed in the past tense. Miguel Barnett also suggested that the bighorn hides had been used for clothing by the Indians in the past—but he neglected to say how long ago. During Kroeber's stays, no Seris went about in the animal or bird (pelican) skins but earlier when McGee visited them they went about in these simple garments. Judging then by Miguel's memory, the use of the bighorn hide for clothing must be pushed back to the period of World War I or even earlier.[1]

[1] Miguel Barnett indicated that the "fur" of the bighorn had once been worn for the cold season "but not now."

[P 10 A]

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IV

BIRDS

136 Woodpecker—There are several species in the area but Gila woodpecker (*Centrurus uropygialis*) 128 is certainly one of them.

Hummingbird—Unspecified species, one of several occurring in the area according to Dr. Orr.

Economic Uses

●262 Such use as had been made of the birds is largely in the form of an addition to the diet. Reading McGee, one gets the impression that the importance of the birds in the Seri diet, in contrast to the marine animals of all description, has declined greatly. We do know that in the past various birds and, most especially, the seagulls and the pelicans represented a significant item. But today out of the basic list of 24 species, only six has been reported as eaten and all, with an exception of the duck, in the past tense. The duck *[825] evidently is the only bird which the Seri consider really fit to eat and yet, even here, there is temporary avoidance. Moreno told me that this bird "we eat only when we visit the island (Isla Patos). [223] But we do not eat it in September because it is [252] too lean. We like it in December when it is fat. We then kill it at night with stones. It is roasted."[1]

All other birds were reported as eaten only in the past and this has been expressed more or less as follows: sea-gull eaten a few years ago, cormorant 8-10 years ago, pelicans 30-35 years ago. This would mean that the pelicans had been discarded as food, at least according to the official Seri version, in the early twenties, before Kroeber's visit. 183 But the Seri disclaimers on the subject 262 of the bird diet are not entirely correct and reflect less the total rejection and more only low esteem in which these birds are held. For I have seen myself the sea-gull and the pelican eaten on few occasions when times were tough, and the [261] food supply was non-existent, owing to the choppy *[825] and windy seas. The Seris caught in the act of cooking the meagre flesh of the pelican or the sea-gull were obviously apologetic.

262 It is interesting that some of the birds present in the area, the quail or the woodpeckers, are not eaten although these birds figure prominently in the diet of some of the other groups. It may well be that the Seris consider them too small to bother.

[252] As far as I could find out, eggs of only two species of birds, the sea-gull and the heron, are collected, boiled and eaten. But the eggs of the

[1] His statement requires some explanation. There is no taboo on eating duck but the bird does not occur in Desemboque or any other place known to the Seris, with [136] the exception of Isla Patos. Here these birds winter, arriving in September and arrive worn out and lean, to *[825] recoup the fat, a few months later. The Seri unfamiliarity with their eggs is another indication that the birds come to Isla Patos only for the winter.

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262 pelicans are not; they are regarded as "bad food," unfit for eating. No further explanation has been offered here and it might be that the same sort of prejudice works here as in the case of the adult birds. Otherwise, reasons for rejecting eggs for food are probably a matter of mere customary attitude without any particular rationalization. In a few instances, the dove being one example, the eggs were said to have been rejected because they were "too small to bother."

237 291 Other economic uses made of the birds are extremely few. At one time, the pelican skins were used for clothing and, in fact, in McGee's time they represented, perhaps, the most important item of clothing for the Seris, having been worn in shape of wrap-around robes, usually covering the lower part of the body. Moreno reported these robes as still in use "30 years ago or more," in the early twenties, but in Kroeber's time these [177] robes were already discarded in favor of the European garment. The Seri, nevertheless, still preserve skins of these birds—the white pelican, [439] larger of the two, always had been favored here—and occasionally sell them to the visitors. Another 237 use made of the feather is in the arrows. The 411 cormorants, heron and the owls had been especially mentioned in this connection. But it is certain that they were not the only birds so exploited and also that this particular use went out of business along with the disappearance of the bow and arrow as the principal weapons. The use of feather for arrows may well continue into the present in a somewhat degraded form. The Seri boys play a [857] great deal with bows and arrows, shooting them at any moving available target. They'll pick up any available feathers.

Pets

231 Somewhat desultory use is made of birds as pets. During my visit I have seen doves and an egret kept in houses as pets by the adults and fed quite frequently. The number and variety of birds which may become pets in households may well * 825 be larger. Pelicans and sea-gulls are less fortun- 857 ate. They are often shot at and over-powered by the boys. But instead of taking them to the households, the boys stage games, shooting them at point blank from bows and arrows and pea- shooters. These somewhat bloody executions take place almost every day. The pattern is the same. Only the subject of the game changes, depending on the available species of bird or animal.

Hunting

223 It is hard to speak of hunting in connection with birds, because there is so little effort made to go out and get them. The main exception is the duck and this, as I already mentioned, is hunted on Isla Patos and clobbered at night with sticks and stones in great numbers. This is one of the few instances in which the Seris will go out of their way to get a bird. Sea-gulls and cormorants and, more rarely, pelicans are dispatched by pea- [411] shooter (stone), sticks, small clubs and, on occasion, with a shot from a .22 caliber rifle.

[P.18A]

9:Malkin E-5 (1953-1955)1962 NU31 Seri NU31

V

REPTILES AND AMPHIBIANS

136 fore it was impossible to check the Seris' ability
* [825] to distinguish between these.

As for the marine turtles, there are several possible species in the area. There is no mistake about the loggerhead. I have seen one carapace and bones taken at Campo Vivora, while with the Seris. The others could be any two of the several species common in the Gulf.

Economic Uses

* 825 In 1956 I published data concerning economic
114 exploitation of the reptiles by the Seris which need correction. Eleven species out of 25 had been reported as used economically. Additional work done in 1955 and after the completion of the MS. indicated a much higher percentage: 17 species out of 26 are used. Thus the percentage increases from 44% to 65%. The percentage of the species actually used will probably rise with additional
● [262] field work because some of the informants are dis-
[124] inclined to admit eating certain animals or will simply say, "these had been eaten in the past but not now." However, close inspection and observation often contradict these statements.

262 The list of species reported as eaten is as follows:

Turtles and tortoises: all species
Snakes: both racers, patch nosed snake and both rattlesnakes
Lizards: both chuckawallas, Gila monster, race runner, northern crested lizard

This listing shows how much dependent are the Seris on the desert habitat for food. Even today, with all the available ready-made manufactured
[178] food or imported food from the *tienda*, they gather evidently most of the common reptiles to increase their menu.

Of the species in the list, only two, both smaller species of sea turtles, figure as really important items. McGee believed that here was by far the most important part of the Seri menu, with the marine birds running second.[1] Now, the importance of the sea turtles has declined, no doubt through a variety of outside influences. I doubt (on the basis of my observation) if altogether it comes to more than 10% of their total diet. The turtles had been replaced as number one food by
[177] the fish (with the introduction of hook and line fishing). But anther factor evidently is the depletion of the turtle population. The third species, the huge loggerhead, is so rare that during the entire
[225] summer of 1953, only one of them had been harpooned and that at Camp Vivora away from Desemboque. The two smaller species have also become very rare and hardly ever show up near the village. They can be taken on more distant expedi-

[1]Eggs of the turtles are considered a delicacy, especially of the smaller of the two. The Seris say that the loggerhead has been eaten once but now almost never, because it became so rare.

[P.22 B]

tions to San Esteban or San Lorenzo. The turtles now are as much a food as a "cash crop." While the Seris are camped at Desemboque, most of the turtle catch is sold alive to the Mexican fish traders who are headquartered in Nogales and Hermosillo and take the catch along with the fishes to the markets in these towns and sometimes even as far as Phoenix and Tucson.

Of the remainder, the most frequent items that show up on the Seri table are probably the rattlesnakes and the desert tortoises. The rattlers are eaten with relish—only the heads and the tails are discarded as poisonous. The larger chuckawalla is considered a particular delicacy but is rarely caught because it lives in a somewhat distant region. The remainder of the animals listed as "eaten" are collected only incidentially.

It is probable that very few species are really left alone and not taken as food at various times, especially when famine distress overruns the camp. As far as I could determine, only three species are rejected as altogether unfit to eat: the gecko, the night lizard and the toad. All three are believed to be highly toxic "in flesh and blood" although real harm could be caused only by the toad. Besides, the two lizards are really tiny creatures and would make little difference when a survival is at stake.

Few reptilians are ever used as anything but food. The sea turtles in a way are at certain times, that is, when they are sold for hard cash to the Mexican traders, whether live or sliced and salted. The only other creature I ever heard about as being used for anything at all was the coral snake. At least one informant suggested that in the past its hide has been used for hat decoration. But coral snakes are scarce and this again could be only incidental. It may be that the rattlesnake hide, especially of the large specimens of the western diamondback, is sold occasionally to a passing visitor but this again is a rare occurance.[1]

Food Preparation

Food preparation of the majority of animals in this group is no different than of most other animals. They are simply skinned, tossed into a pot of boiling water and cooked, occasionally with salt as the only ingredient. Larger individuals, notably turtles, will be quartered and then boiled or roasted on a grill. The chuckawalla and the desert tortoise are said to be fried, but whether this is the usual procedure I can't say, because only a few of them had been brought into camp in my presence. The tail of the Gila monster supposedly had been fried in oil "in the past."

Food Preferences and Taboos

It is obvious that some creatures in this group are considered better food than others. The chuckawalla is especially favored. When several were brought in from San Esteban, I couldn't persuade the owners to part with them, although I offered a huge price (for local conditions). The captors took

[1] Another use in the past—snake-skin belt worn. It is illustrated by McGee (1898:170, Fig. 7).

[P. 23A]

262 them to their shelter and held them there for several days before they and their families finally ate them up. The turtles are also a well-liked item.

As already indicated in some instances there exists preference for a particular part of an animal. Of the Gila monster only the fat tail was said to have been eaten, and of both rattlers, the head and the tail are discarded on the grounds that they contain toxin. Finally the toad and the gecko and *Xanthusia* are all rejected as completely venomous.

178 262 It is also evident that changes in the Seri taste have occured in the course of the past several decades. Some animals are on their way out as food, and here we have the Gila monster, the whipcoach, the red racer and smaller lizards. In several cases, and this includes the Gila monster, the responses indicated that the animal had been eaten in the past. I also observed that on the sly, the Seris would eat them when other food was in short order. But they are reluctant to admit this and often altogether denied it.

Hunting

224 [225] Most reptiles are captured by hand or else killed with a stick, stone or pea-shooter. Except for the turtles, the Seris will not make special expeditions. But it is certain that if they find themselves on any of the islands near the shores of Baja California they will go ashore deliberately in search of the chuckawalla.

225 The turtles are another matter. Here now, just as in the past, special expeditions are made in order to get them. These expeditions take place [501] nowadays in the usual flat-bottomed plank boats, either motor or oar propelled. The hunt takes place only during unusually quiet and dark nights, when the Gulf is smooth and calm and there is neither wind nor ripple. With the slightest disturbance, [354] turtle fishing is impossible. It is all done with the [411] torch lights or Coleman lanterns. The principal and only weapon is the harpoon, identical with that described and illustrated by McGee. The turtles are then harpooned, dragged into the boat and either left alive, when the hunters have a sale of live ones in mind, or pounded to death with a [251] club or oar, quartered and then either consumed on the spot or else dried and salted."

[224] [462] While the collecting of the smaller animals usually falls to the children or women, turtle hunting is men's job. Men, too, usually get the chuckawalla because they usually visit more distant islands.

Pets

231 None of the reptiles are pets in a real sense. Those few that might be kept are only held until the day when they are butchered and eaten. It is motivated more by the wish to preserve fresh food than by any affection for the animal. The turtles, the tortoises and the chuckawalla belong here. Occasionally a Seri boy will string a lizard, a *Sceloporus*

"The loggerhead is hunted in the daytime because, owing to its great strength, night hunt would be too dangerous. Two harpoons are always used on it, while for the smaller species, one harpoon usually suffices.

#825 [171] an idea from one animal to another.[13] The *Xantusia* does not share this similarity to the salamander in appearance, but it is found along with the gecko and behaves much like the gecko when exposed to the light. Hence, perhaps, comes the association.

I excluded here from the discussion the red racer because the notions concerning it are conflicting, with some informants insisting that it is toxic and can cause death and others that it is not. But all agree that it'll bite—and painfully so.

Finally the toad. The toad, although unagressive and considered as such, is feared a great deal as a repository of all sorts of toxic traits. There was some disagreement as to its ability to bite, with some informants thinking that it does bite with its tongue, others thinking it can't bite at all. But all agree on the following attributes of the amphibian: venom in body, toxic on touch, always fatal to eat to most animals and to all men. In this the toad joins the gecko and the *Xantusia*. [262] These too are believed to be fatal to eat and these three represent the only animals in this class that are considered inedible.

It is interesting that the list of toxic (though non-fatal) animals should also include the *Phrynosoma* although here there seemed to have been again disagreement between the informants. The lizard is perfectly harmless and actually will not [763] bite even in self-defense. But the Seris say it causes swelling.

752 278 For the rattlesnake bite, the remedy is a plant called *Kásox*. An extract of this plant is made after boiling it in hot water and then it is taken orally. It is also applied to the wound and, the Seri say, it must be taken all day long for a full day. The Seris take this when they are harmed by these snakes. This plant is supposed to be found in the mountains near Kino but not in the Desemboque or Tiburon area. But in addition to their own medicaments, the Seris, especially the younger fellows, will make use of the regular anti-venom available at the school or mission.

Attitudes Toward Reptiles and Amphibians

#825 With the few exceptions, these animals are not particularly feared. Those that are feared are considered dangerous in some ways, and, in fact, most of them are either by their ability to inflict painful bite or by possession of venom. But otherwise, their attitude seems to be very much a matter of fact and one of unconcern, which seems to corroborate Kroeber's opinion of the Seris' psychological makeup in other matters.

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[13]Since this has been written, I have plenty of evidence that the gecko is similarly dreaded in many parts of the world.

[P 30 B]

226 177 and, from all accounts, also from the Japanese whose trawlers worked in the Gulf in the late 1930's. Today, hook and line fishing from plank [411] boats almost completely replaces earlier methods, the spear (pueiro) and the harpoon (barilla). [225] Harpooning is still done in hunting marine turtles while spears are occasionally used on larger groupers and also on sharks and mantas. Harpoons were also used in connection with the latter. But since World War II the shark fishing has declined, owing to the development of synthetic vitamins and abandonment of sharks and mantas' liver oil as a source of vitamins. In these operations, the Seris were for a while involved to a considerable extent. But now they have completely switched to commercial fishing which supplies not only food but also ready-made cash from [439] the Mexican traders, and with it the Seris can purchase luxuries of life in the Mexican *tienda*.

●262 Altogether, out of 42 species listed here, the Seris reported taking for food 20 species which are as follows:

Malacosteaus zonifer
Firella simplicidens
Anisostremus davidsoni
Paralabrax maculofasciatus
Lythrulon flaviguttatus
Mugil sp.
Cynoscion parvipinnis
Anchovia macrolepidota
Bairdiella icistius
Stereolepis gigas
Mycteroperca jordani
Cynoscior macdonaldi
Epinephalus analogus
???? (Pescara)
Trachinotus paitensis
Verrunculus polylepsis
Gymnothorax castaneus
Hypsoblennis gentilis rickettsi
Abudefduf saxatilis

The most important of these are the groupers, the *baya*, *pinto*, *totuava* and *mero*—the latter a giant fish often in excess of 150 kg. and nearly three meters long. The most important of these is the *baya*, a medium size fish taken daily in vary- [226] ing amounts. I suspect that this fish accounts for more than half or maybe even 2/3 of the total Seri catch, weight-wise. Of others, none is of any importance except seasonally.

* 825 Another sort of use is made of the sharks and mantas in connection with the already mentioned exploitation for liver. Five species of sharks and the horned manta were listed by the Seris, with *chata*, *gato* and *composo* most frequent and perhaps most important.

Trading, as already mentioned, is of considerable importance to the Seris. Some fish are eaten [439] only occasionally, but they may be traded off to the Mexicans.

262 Not all fish are eaten. In most cases no particular explanation had been offered for the rejection. But, in some, specific reasons were mentioned. The *Scorpaena sonorae* and *Cetengraulis mysticetus* are so rejected because they "are too bony to eat." *Gillichthys seta* are considered unfit to eat because of its tiny size while *Sphoeroides annulatus* is refused because of its supposed toxicity, of which more later. Finally, the sharks are not eat-

[P.32 A]

262 en simply because their flesh is disliked and unfit for human consumption. But it may also well be that some of them, especially of the giant variety, are not eaten simply because they are far too large to tackle and the Seris fear hunting them.

The Seris indicated also in some cases that larger specimens of fishes are eaten when they reach the size which would justify the effort. This is true of *Malacoctenus zonifer* which they indicated is "eaten when large," that is when at least 10 cm. long.

[226] Although only sometimes did the Seris specifically indicate that certain fishes are used for bait, it is very likely that almost all small or lesser fishes are so used.

262 178 In some cases the Indians indicated changes in preference for given fishes, with the time. For unexplained reason *Gymnothorax castaneus*, the morene, has been claimed to have been eaten in the past but not for the last 11 years. It isn't clear why the figure of 11 had been used and why suddenly in the early 40's they should stop eating it while the Mexican drool over it. But it may be also that here we have merely personal preference of the informants, as so often happens. As for the *pescava* it was formerly taken for food but now it is merely sold to the Mexicans. This [439] practice is increasing also to include the immense *mero*, even larger than the *pescava*. The fish is mainly sold but rarely eaten by the Seris themselves.

Food Preparation and Preferences

252 Food preparation is simple and in the main differs not at all from the preparation of other animal diet. The fish are either boiled whole or in part or else are roasted over slow fire on a grill. The entrails are usually discarded, but otherwise the beasts are eaten entire, eyes, brains and the rest, while the tiny fishlets are eaten complete with the scales and guts.

262 As for the preferences, as expected, there are some fishes that the Seri like better than others. The *bava* in the first place and the *pinto* in the second lead the list. The Seri prefer them to all others and consider them a real delicacy. On the other hand, there are some fishes that they'll eat only under protest, meaning when times are hard. *Girella simplicidens* is one such creature. The *Puerco* or *Cochi* is another. I have seen boat loads of puercos brought in with the other fish and unceremoniously dumped out on the beach to the [231] dogs. Literally! The Seris took to this fish only when fishing was poor during the wintry days when they were held ashore by the weather. Even [183] then, they tried to eat the despised creatures on the sly, avoiding being seen doing this, and when I or the Mexicans picked up fresh fish from the beach to take home they laughed saying that we acted as a *cochi* (pig) would!

Other Economic Uses

* 825 237 322 One use made of fish concerns two species of sharks, the *chato* and *camposo*. Here, the informants claimed, the oil from their liver had been used in earlier times for polishing wood. This is

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* 825 by the Seris in most species of these creatures and in the few in which they couldn't tell what the differences were, all, as already mentioned, were species they consider too dangerous to approach. Otherwise, they think the tendency for the sharks is to have both sexes equal in size.

The tabulation above throws interesting light on the Seri notions and suggests presence of cultural stereotypes in many cases, rather than of empirical observation. Where data are available, the indication is strongly in favor of considering the males larger than the females, the very opposite of the natural tendency in the fishes. Another of these has to do with the coloration and when color differences were indicated at all it had been suggested that the male was brighter in color than the female. It is instructive that this is where two different fishes had been confused for this very reason. *Hypsoblennius* is considered a male of *Malacoctenus* because it has a red throat. Both the tendency to view the male larger than the female and the tendency to ascribe brighter coloration to the male appear again and again in various groups of animals.

Concerning the size differences, where indicated, the difference often had been expressed in numbers, such as a foot or half foot longer and so on.

The tendency to consider the female fish bulkier and the male fish leaner and narrower may appear independently of any other criteria. This is well explainable on the grounds of temporary increase in bulk during the time when the female carries eggs, although the informants did not always indicate this. However, in some other instances, this fact has been pointed out by them. The difference between the male and the female was one of the female being filled with eggs.

I could not account for any other differences between the sexes in fishes. They consider both sexes no different temperamentally and either equally harmless or equally dangerous. They also indicated no differences in their own preference for the flesh of either sex in fishes, not even at the time when the female is gravid. This would indicate no special predilection for the fish roe in their diet.

● [262]

Age

Only in three instances the informants made a stab at guessing the life span of the fish. The age span of the *Lisa*, *Corvina* and *Pinta*, the informants estimated at roughly 5-7 months. For the remainder they simply said "I don't know." The answers, such as they are, indicate individual ideas of what the length of life in fishes might be rather than any sort of generalized cultural concept. Of course, there is no way for the Indians to guess even anywhere with a near accuracy the hypothetical age of fishes. As a matter of fact, little is known among the biologists about the upper limits of longevity in fishes and only beginnings had been made in a few economically important species to ascertain the rate of annual growth for immature fishes.

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*825 for Desemboque or Porto Libertad but marked negatively for Porto Kino and reverse. Kino is sandy, Desemboque is rocky. Hence the difference.

With two exceptions, all sharks are marked as ubiquitous but sticking to the deeper waters of *the Gulf or as the Seri would express it "found in* the Gulf." This sort of thing is hard to mark on the chart and therefore a blanket statement covering all such is indicated.

Toxic or Dangerous Fishes

Very few fishes are considered really dangerous or aggressive. There is a generalized notion, undoubtedly not entirely unfounded, that the large sharks are dangerous and that they'll make dinner of humans if given an opportunity. They are also feared for their strength and for the size of their teeth, regardless of whether or not they are aggressive. The huge sharks, most likely the whale sharks, had not been hunted by the Seris, so the informants say, owing to their size and brute strength. Larger real fishes, *mero* and *totuava*, are also considered large enough to throw men into water, though not aggressive. The same goes for the manta. [226]

The smaller mantas and the sting ray are greatly feared, owing to their possession of a nasty spine with which they can sting badly. The smaller sting rays are particularly feared in this respect because they bury themselves in the shallow sandy beaches and cannot be seen. The sting is painful and is also considered toxic although the toxicity is actually due to the accumulation of slime and danger of infection.

Two other fishes are considered toxic but harmless. *Myrichthys tigrinus*, which, as already mentioned, is believed to be a snake, is said to have venom but is harmless because it does not bite. *Scorpaea sonorae* is also believed to be venomous and "the venom is located in the spines in the fins." This creature, the Indians say, may inflict pain which will last for a full day. Finally there is the odd case of the little *Sphoeroides annulatus*. This one is thought to be venomous in the flesh and therefore dangerous to eat. The explanation for this was offered as follows: "100 years ago a Seri man ate one and died of its venom. It was very long ago. Maybe 100 years." [262]

It is difficult to account for this story unless someone actually ate a fishlet so utterly rotten that septic reaction set in and the man died of food poisoning. It is also not likely that such a trivial event would be remembered as far back as 100 years ago.

[P. 37 B]

9:Malkin E-5 (1953-1955)1962 MIXH Seri MIXH

MOLLUSCA

VII

Species	Food Prev.	Food Past	Decoration Prev.	Decoration Past	Trade Prev.	Trade Past	Bait
Octopus bimaculatus	x	x				x	x
Cadakia distinguenda		x					
Laevicardium elatum		x			x[1]		
Carditamera affinis	x	x					
Acmaea dalliana			x	x	x		
Crucibulum spinosum		x	x	x	x		
Chione undatella	x	x					
Chione californiensis	x	x					
Pteria peruviana	x	?	x	?	x		
Volsella capax	x	x					
Olivella dama			x	x	x		
Cypraea annettae				x[2]			
Tegula rugosa		x		x		x	
Conus regularis		x[2]		x	x	?	
Phyllonotus erythrostomus		x				x	
Turritella broderipiana		x[2]			x	?	
Polinices reclusiana	x	x					
Chlamys subdudosa	x	?					
Atrina maura	x	?			x[3]		
Navicula pacifica		x					
Turbo fluctuosa	x	?			x		
Solenostira pallida			x	?	x		
Ceritium stercusmuscarum			x				
Trivia radiana			x				
Ficus ventricosus	x						
Nioche bistrianoa	x	x					

[1]Occasionally used as dip spoon
[2]Supposedly used in the past for money
[3]In the past "giants of 300-400 maybe years ago have eaten it."
[4]Only pearls

These figures show then 26 out of 37 species exploited economically in some way, that is 70%. These figures show increase over the figures I have published previously (1956) which were 21 out of 36 species and 58% respectively. The corrected figures are the result of brief additional field work in 1955.

Food

A good part of the molluscan forms are used as food. Altogether 19 species are listed as such, although out of these, only 11 were reported as being part of the diet today while the remainder only in the past. It is obvious that there has been progressive decrease in the Seris' dependence on the molluscan diet within the past few generations.

Four of the species reported as part of the Seri diet at various times had been collected from the kitchen-middens. There are: *Pteria peruviana*, *Chlamys subdudosa*, *Volsella capax*, and *Navicula pacifica*. Of these four, *Navicula* has been reported as eaten in the past "maybe 100 years ago, but not

[P. 38 B]

262 now," while the *Volsella* has been eaten in the past
172 just as much as it is now. The find of these four species in great numbers in the kitchen-middens only indicates that they probably were an important part of the Seri past. Historical records are scarce and no archaeology had ever been done in the region, except for Gifford's (as yet unpublished) excavations at Caborca. But Caborca is far away from the coast. Strong circumstantial evidence suggests that a good many of the kitchen-middens represent relics of the Seris' past encampments.

262 The verbal data for the Seris' past use of some species of molluscs in their diet is uncertain or unavailable. But it is safe to assume that if the animal is eaten today, then it certainly had been [174] also eaten in the past. It is not probable that the Seris should suddenly develop a taste for obscure kinds of animal food, while the entire trend had been in the other direction.

Of the different species the augur shell and the cone shell were said to have been "eaten in the past by the giants. Maybe 300-400 years ago." It is [173] hard to account for this idea except that it probably refers to a myth.

Preparation

252 Preparation of the mulluscan food differs little, if at all, from any other food of animal origin. The animals are simply separated from the shell, the meat is dropped in water and boiled, usually [263] for half an hour. Few ingredients other than salt are added and their use depends entirely on the availability of cash and on the individual tastes of the Indians. As far as I could tell, there is no differentiation in this for people of different sexes
262 or ages. Also there is no preference for different parts of the body.

Preferences

Some species are more liked than others, but this is related to their size rather than anything else. There does not appear to be any belief in the toxicity of molluscs and the occasional justification of the inedibility has been expressed in terms of size. Some species, it had been asserted, are not eaten simply because they are too small
* [825] to bother. Only *Cardium consors*, as one of the informants suggested, is venomous, but even this, to him, seemed uncertain and dubious for he said "maybe it is venomous."

Other Uses

301 a) *Decoration*: A considerable number of shells
* 825 were reported as used for decoration. The tabulation indicated altogether 10 species that had been or still are used for ornament. Three of these are discarded now, seven still in use. This is mostly in the form of various sorts of necklaces, which the women string on ordinary thread. *Solenostira pallida* is supposed to be worn as such by women and children, while *Cerithium stercusmuscarum* by the boys only. But I have never seen either of them make use of it in any way. On the other hand, *Trivia radiana* and the *Olive shell* are much

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McMillin E-5 (1953-1955)1982 MUSI Seri MUSI

*825 [172] [262]

Because seasonal deposits of shells may differ archaeologically and because they do make up an important part of the Seri diet, both now as also in the past, the dominant species for each season are listed below:

Occurring in Summer only	More common in summer
Isognomon chemnitzianus	*Chlamys subundosa*
Cardium consors	*Eurytellina rubescens*
Codakia distinguenda	*Acmaea dalliana*
Fiona ventricosus	
Phellium abbreviatum	
Crepidula crepidula	
Trivia radiana	
Occurring in Winter only	**More common in winter**
Pteria peruviana	*Turbo fluctuosa*
Polinices reclusiana	*Octopus bimaculatus*
No data	
Volsella capax	
Nucha bistriosus	

In three of the species which are present only during the hot season the Seris indicated that they winter buried in mud.

Rhythm

There is a clear suggestion that to the Seri the *Mollusca* show no predilection for either diurnal or nocturnal activity but that they are active both day and night. Data for this had been obtained for 10 species and this answer has been given in every case—merely saying that "it walks day and night." This falls in line quite closely with the Seris' ideas about other creatures of the sea in contrast to the terrestrial animals. There is but very feeble suggestion that some of the fishes are either nocturnal or diurnal. Vast majority are both.

Distribution 1/A

Familiarity with the geographical distribution of the molluscs is for the Seri in a way a function of their familiarity with the particular locality. The largest number of species they cite for the localities in which they regularly camp, the smallest for those they know very little. Thus, the records indicated for the coast of B. C. are only those where the informants indicated by the blanket statement "found everywhere." But this does not mean that they actually cited the animal from such a locality.

In many instances presence or absence of a molluscan has been explained by presence or absence of its favorite habitat. The informants repeatedly pointed out that excessive sandiness of the Kino's shores is responsible for an absence of a great variety of animal there. In other cases, presence of rocks is a requirement for several others. But these matters will be discussed in greater detail under the heading of ecology.

Ecology

The Seris have a very clear-cut idea concerning ecological preferences of the *Mollusca*, a matter which is not too difficult for them to observe.

[P 418] 1/A [see category 116, pp 64-65 for distribution charts- Analyst.]

VIII

CRUSTACEA

136

Scientific	Common Name
Cirripedia	Barnacle
Axius vivesi	Mud-shrimp
Leptodius occidentalis	
Microphyrus platisoma	
Speleophorus schmitti	
Petrolistus armatus	
Callinectes arcuatus	
Glyptoxanthus meandricus	
Pilumnus townsendi	

* 825 All animals in this group are considered live animals—and not plants. This interestingly includes the barnacle. The only way one may account for this is probably the Seris' observation of the cracked barnacles and of the moving flesh inside. Barnacles growing on the marine turtles are also classed as animals, though of a different kind than the barnacles growing on rocks or on the mangroves. They are called *piojos de cahuama*, literally, turtle lice.

The Seris regard *Glyptoxanthus* and *Pilumnus* as the same kind of animal. *Pilumnus* is considered to be merely a large specimen and "maybe an adult," the other *Pilumnus* "is young." When questioned about the reason for the identity the informants pointed out the hairiness of both crabs.

On the other hand, although *Spelenophorus* and *Microphyrus* have the same Seri name, they are considered two different species.

Economy

●262 Crustaceans play little role in the Seri diet. Very few are eaten at all and when they are, the amounts are insignificant and they are considered an inferior sort of food. The informants denied that they have eaten any of them in recent years, but allowed that two species, *Callinectes* and *Axius*, had been part of their diet in the past, although how long ago they didn't specify. There is no doubt, however, that in time of frequent [261] sub-famines, the Indians resort to these lowly creatures.

* 825 In addition to this, *Microphyrus* had been mentioned as a fish bait. It is possible that in a pinch [226] other forms are also so used. Finally, the most frequent function that the crustaceans play in the [857] Seri life is as objects of play for the boys who [411] spear them with the miniature two-pronged "puieros."

Sexing

For three species of the crustaceans the Seris indicated distinction differences between the sexes. In the two crabs, *Callinectes* and *Leptodius*, the males have narrow center plate while the female's center plate is wide, which in fact is a well-known sex difference in crab. In *Glyptoxanthus* and *Lep-*

[P.43 A]

Malkin E-5 (1963-1965)1962 MUSI Seri MUSI

X

INSECTS AND ARACHNOIDS

114 Altogether information has been collected concerning 92 species of insects, scorpions, ticks, myriapods and arachnoids.

Economic uses

262 [114] McGee says that "good many insects" are part of the Seri diet, although he does not specify just which they were nor how significant. There is no doubt that in his days, the insects played some role in the Seris' food and that they were probably far more important in the distant past, in the [177] XVIII and early XIX centuries, before large flocks of livestock, horses and cattle of the Spanish rancheros offered excellent opportunities to supplement the usual diet.

Of all this but minor traces remain today. The Seris even have forgotten which insects had been eaten by their ancestors. Apart from the bees, only the Sphingid caterpillar has been indicated as "eaten in the past, but not now." As for the bees, [263] their honey still is part of the Seri diet. But with the availability of sugar, even this addiction dwindles.

† 825 857 Other than this I have been unable to discover any uses whatever, except perhaps as playthings of little boys, with the usual torture in view. The *Cicada* is most significant of these, of which more later.

Pets

231 [171] The only insect pet is a *Cicada*. This insect is usually tied to a long thread, its forewings partly clipped off and then released into the air like a kite. Local Mexicans also provide their own boys with a similar kind of toy.

Hunting

222 Only bees are hunted. They are usually flushed out of the cave shelters in the mountains. The operation is accomplished without the use of smoke. The honey is cut out with a knife.

Taxonomy

* 825 Seris' ideas of association of various insects are very loose. Few insects are recognized to form natural groupings; bees, butterflies, wasps, spiders are most distinct. However, there are all sorts of gradations blending confusedly with each other, often dependent on the knowledge and interest of particular informants.

Simple recognition is not always present. Out of 92 forms, 13 the informants could not identify, simply saying that they didn't know them. *Cicindela lemniscata*, *Melanotus cribricollis*, *Horistonotus*, *Meloid*, *Oxacis*, both species of *Cymatodera*, *Photopis*, *Scolopsella*, tiny Scarab, *Leptoremus*, *Homolocorus*, and *Reduviid*—all these were in the

[P. 40 B]

9:Malkin B-5 (1953-1955)1962 NU3I Seri NU3I

XI

SUMMARY

* 825 [114] In 1956 (Malkin 1956:74) I published tables indicating the degree of economic exploitation of the animal world by the Seris. These tables were incomplete and also need corrections. Therefore below I am reproducing the revised version.

Class	Species Reported	Species Exploited	Percentage
Mammalia	21	9	40
Birds	24	6	25
Reptiles and Amphibia	25	17	68
Fishes	44	23	52
Molluscs	37	27	70
Crustacea	10	2	20
Insects	92	—	—
Miscellaneous	9	—	—
Totals	262	82	30

These figures show as yet remarkable degree of exploitation of the products of the sea and also of the reptiles with correspondingly lesser interest in the terrestrial animals in general. Of course, mere listing of animals does not tell the whole story. In the first place, it does not indicate the changes that took place nor does it suggest the relative importance of any group or species. Historically, the situation is different now. Out of nine species of mammals reported as eaten only six still figure out in the diet. The reduction is even more striking in birds where only three are admittedly eaten and two of these only furtively. More yet, only 12 species of marine molluscs out of 27 are eaten while the rest get discarded. All this is tied up then with the changes in the economy, with the importation and increase of the trade foods and goods and also with increasing preoccupation with the commercial fishing at the expense of hunting and gathering.

262 177

262 Individually, by far the most important in the Seri diet and economy are the fishes with half a dozen large commercially lucrative species leading the list. Next come the marine turtles and following these for the third place tie the molluscs, the mammals (lagomorphs, bighorn and peccary) and probably the rest of the reptiles of which the rattlers are probably most important by volume. Insects do not figure any longer in the Seri economy in any way, although at one time they probably had some significance. On the other hand, while the food importance of the molluscs decreased immensely, their trade importance is on the upswing owing to the demand from the outside. Thus the basic changes in the Seri patterns of exploitation of animals has been a result largely of an outside stimulus.

[439] [177]

Fishing and Hunting

226 185 Fishing is practiced mostly to satisfy the immediate needs, of petty cash and food. Once these are satisfied, there is no incentive to fish until the need arises again.

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McAlkin E-5 (1953-1955)1962 MUSI Seri MUSI

XI

SUMMARY

224 Hunting is very decidedly secondary to fishing, although it is still much practiced by certain individuals and in a desultory way probably by all.

462 There is a clean cut division of labor in all these occupations. Fishing and hunting are men's occupations, gathering of the desert animals and beachcombing for the intertidal animals is largely the job of women and children. Boys get broken [868] into men's occupations in adolescence, girls into women's jobs very much earlier.

224 Avoidance of fishing or hunting certain creatures appears much more a matter of custom than of well defined and socially rationalized attitude. Frequently an animal is not hunted simply because the Seri feel it is too big and too strong for them to tackle.

157 Through all these activities, Seri individualism is curiously woven and accounts for the failure of anything that might resemble a collective effort.

Food Preferences and Preparation

252 Seri food is prepared in a simplest sort of way. [263] Boiling in water is usual with salt and sometimes a few other spices added. While most food is prepared that way, snakes and fishes are usually fried, without any ingredients. There has been a [178] notable shift toward greater fanciness in the ingredients, as they have become more readily available.

262 There are many preferences. Animals are scaled in desirability. Some fishes, marine turtles, chuckawalla, deer and peccary and duck are at the top of the list; lower animals, smaller fishes including puerco in the middle, while the sea gull and the pelican are probably at the very bottom of the pit. This again reflects temporal changes in tastes [178] although not necessarily a direct influence from the Mexicans.

Pets

231 Few pets are kept, other than dogs. Such animals as come are those captured accidentally. In most cases they are bird nestlings.

Taxonomy

* 825 Differential criteria are applied in the classification of different groups. There is less tendency to group birds than to group different mammals and classificatory ideas break down almost completely in smaller animals, especially insects and molluscs. Considering the economic importance of the molluscs, poor ability to distinguish the Gastropods from the Pelecypods is striking.

The classificatory criteria differ for different groups. Mammals are generally recognized by the furiness, birds by the ability to fly and the pres-

[D·54 B]

123 handed to show their friendliness.

142 One was a young man with rather pleasant features, his braided
291 hair hanging below his shoulders. His name was Antonio Herrera. The
123 other was a wild-looking specimen called Ramon Blanco. His hair was a
[302] tangled mat with a short braid behind, suspicious black piercing eyes,
long sparse moustache and chin-beard hiding a broad cruel mouth. He
[411] wore the remnants of an old sweater, a short dirty kilt, or skirt,
nearly to his knees, a belt full of cartridges, mostly empty, and a
long knife in a rawhide scabbard.

123 The young man had been baptized and given a name by Roberto, who
[765] had acted as godfather or *patrona*, many years ago. He wore a hat,
[291] jacket, and pants of blue denim, and *guaraches*, or sandals of rawhide.

We shook hands all around and then they called and halloed in the
brush and soon three women and a lot of children, wild and half-
[415] clothed, filed into camp. The women were tall, gaunt, unkempt, ragged
[402] and barefooted, paying us not the slightest notice. They were bearing
[422] on their heads large baskets filled with all their earthly posses-
[854] sions---cooking ollas, scraps of cloth, pieces of turtle meat, bone
[231] brads, hair brushes, and odds and ends. They carried, also, an infant
or two wrapped in odd bits of rags. Several gaunt dogs followed in
their wake.

342 In all, three families came trailing in, removed their household
[512] equipment from their heads and resumed their interrupted and primitive
housekeeping. Each family occupied its apartment in the row of brush
shelters, separated from each other only by brush partitions with a
total lack of privacy. These shelters, always open to the sea, serve
as shade from the fierce rays of the sun, and also as windbreaks, but
[361] are no protection from infrequent rains. They are occupied only for a
brief period and then their nomadic tenants move on to fresh *cahuama*,
or sea turtle range.

123 Soon, a third man arrived while we were near the huts, Manuel
[142] Encina. He was a man of sixty-five, gray hair and mustache, seamed
features, and not evil looking. He was out of breath. He had gone for
water to the same water hole where we had been yesterday, struck our
tracks, had left his water cans and hurried back to warn his people.
He was greatly relieved to find friends.

Since he had gone for water, inquiry revealed there had been no
water in camp for two days, and six adults and one girl of thirteen
and six children were thirsty. We gladly gave them one of our five-
[225] gallon cans of water and they were very grateful. They had caught a
[262] sea turtle the day before and gave us some turtle steaks which looked
like beef or mutton.

312 As the camp was without water and we were running short, the young
402 man and Encina offered to get some. Each took a *palanca*, or short
123 shoulder pole with knotched ends, fitted empty five-gallon cans in

123 nets of twisted fiber, hooked the nets in the ends of the notched
312 stick and started off nine or ten miles to the water hole in the heart
[402] of the mountains.

Water carried so far over loose, sandy soil, dodging cactus, threading a devious way among the *talus* thrown off the cliffs and slopes of canyon walls, with the water-bearer barefoot, acquires a value absolutely unknown to the man who draws an unlimited supply from a faucet.

The two men were gone six hours and when they returned they were almost staggering under the heavy loads of water, each man carrying at least one hundred and ten pounds of water, as the cans were full. In addition, one man had a canteen full.

The thirsty people drank sparingly, and a little Seri maid poured some of the precious liquid into a cooking olla for a thirsty dog. After the dog had lapped sufficient to allay his thirst, she carefully poured the residue back into the can, never losing a drop. One drop of water could not be spared after that arduous trip.

484 Bob says a man goes to Hermosillo occasionally and returns to the
147 coast, ninety miles, with two to five cans of *mescal*. It takes probably
648 four days to do it, but it is a wonderful feat of endurance. He said about thirty years ago a woman walked the ninety miles during one night, afoot, and reported to the Government House when it was opened at nine in the morning that about fifty of her people had been shot by Roberto's uncle at various times. This uncle was a very hard rough man and the Seris were fond of his mares and steers for meat, and used to steal, so he began shooting a goodly number. Fearing a man messenger would be shot, as men were frequently shot while going along the road, they sent a woman.

Ysabel was Governor at the time. Judgment was rendered against the uncle, and it is probable that a hanging squad would have been sent out to execute him. The Governor, a great friend of the family, sent for him, and he rode ninety miles at night on horseback and was saved with the Governor's help.

Roberto saw twelve Seris pack meat from two mares, two steers and two yearling heifers, for four or five miles to their boats. Their endurance and strength is phenomenal. The question naturally arises, "Why are not burros used by the Seris on the Island to ride and pack, as they are by their Mexican neighbors on the mainland?" It has been [440] tried, but things were reversed; the Seris packed the burros around in their stomachs.

261 Roberto said: "These people, living on the verge of starvation,
• 262 never having a continuous food supply, would kill and eat every burro, and it is a common thing on the mainland, if a cow or horse dies, and Seris are in the neighborhood, they will try to beat the buzzards to it. They will gorge in times of plenty, and when food is scarce they

[text continues on p. 160]

261 will exist on very small rations, bear burdens, and walk long dis-
262 tances. Their food is anything that walks, flies, crawls or swims,
[252] and they eat it raw with the same relish that we eat it cooked. There is but one thing they will not eat; they draw the line on the Gila monster. They are the most perfect type of human being adapted to desert conditions that exists today. Convey them blindfolded many miles into the heart of the desert, empty-handed, remove their blinders, and they will find both food and water where others would perish. The Papagos and Yaquis do almost as well."

302 We gave the women a small bag of flour and three or four cubes of
[123] sugar around, and the men three packets of tobacco each and two boxes of matches. Matches with them are very precious and are rarely used. Rather than use a match a woman came over to our fire and borrowed some coals to rebuild her fire. From this point the nearest matches are a good deal over one hundred and twenty miles distant, so they have to economize in every thing.

422 Each rag is valuable, and flour, sugar, coffee and rifle shells
[434] are absolutely priceless. While they know money, it has no value here.
[437] Only commodities go here. The most highly prized things are boards to
[389] make boats and rifle shells to get game and protect themselves. All empty shells are saved, the primer punched out, straightened, a match head put in, a little pinch of powder on top, the shell filled up, a long bullet inserted, the shell pinched tight, and a fresh set of ammunition is made.

142 The women and children certainly did look wild. Their hair was
241 frowsy and unkempt, their skirts and waists a patchwork of dirty rags
302 coming just below the knees; their features seamed and hard and cruel. Their complexion was very dark. They had no under garments. The children wore only a dirty shirt coming a little below their thighs, and even that is ragged. One or two of the women had a dirty bandanna over their heads. How I wished I could have seen them in their ancient, picturesque pelican-skin kilts!

302 I happened to witness the operation of a Seri beauty parlor. A
[824] mother brushed the hair of her thirteen-year-old daughter with a brush
[293] made from the fibrous roots of a certain grass tied together with
[515] sinew. During the operation if she came across a *piojo*, and she found several, she plucked him away from his feeding ground and dropped him in the fire.

The hair neatly brushed, the mother then mixed paint in a small vessel and with a tiny stick painted a bright blue design under the eyes and across the cheeks and nose, and then she added narrow white stripes, which, contrasting with the blue and the dark skin, produced a very striking effect. This paint is easily removed and the women often paint and remove three different face designs in one day.

304 I did not see tattoo work on either men or women, nor did they
301 wear ceremonial feathers as did our western Indians.

157 The women are virtuous and faithful and perform all the duties of
152 wife and mother and bear their share of hardships. The hard life,
[145] exposure and struggle for existence soon causes hard features, wrinkles
[165] and ugliness. Many babies die young and the tribe probably numbers
[167] only about two hundred.

The dancing by the driftwood fires continued as we turned in to
123 rest, our eyes constantly drawn to the flame and the glittering eyes in the wild dark faces, while the waves of the sea accompanied the chanting in that mysterious isle of Seriland.

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Seris - off to the fishing grounds - December 1934.
Alcatraz Island in distance.

222 In Seriland most of the food comes from the sea. During April and May, at the time of my first visit, a green grass growing on the sea bottom was detached and washed ashore. The women dragged it up on the bank near camp and spread it out to dry. Some of the stalks contained about seven fine green seeds the size of a pin head. When dry, the women threshed them out with sticks on a piece of canvas. These are
[285] cleaned by the deft use of the *batea*, or winnowing basket, of which these people are pastmasters.

252 A pint of these fine seeds were parched in an olla over coals of driftwood and constantly stirred to prevent burning. It was then ground
• 262 on a flat rock like a *metate*---any flat rock---into a green meal which was very nourishing. This was cooked in an olla with turtle oil, making a porridge like thick green paint. It was then drunk or eaten with the fingers. If there is plenty, two fingers are used; if not, only one finger.

262 The Seris also eat the fruit of the *cholla* cactus, *pitahalla* and *sag-*
222 *uaro*, and probably many other plants in season, but they are wild to get flour. But the principal diet is *cahuama*, or sea turtle.

225 After a day or so with the Seris, their food supply became exhaust-
123 ed and they made arrangements to take our boat (all they had was a
[177] *balsa*) and get a sea turtle. So at four o'clock in the morning, with Roberto and Nene, his brother, and myself, they shoved off for the fishing ground. It took two hours of hard rowing to reach the Sonora
[133] side, as the tide was racing up the *Infernillo*. Most of the waters are shallow, with patches of dark and light sandy bottom, with seaweed or grass. On this green grass the turtle feeds; it is their alfalfa field, and it takes a keen-practised eye to see a turtle at the bottom and harpoon him before he escapes.

225 Once on the hunting ground, water, one of the Seris stood in the
[411] bow with a harpoon twenty feet long, a detachable barb on the end of it, and a heavy line attached. The Seri in the bow motioned with his hand this way or that, slow or fast, and watched the bottom. At last he plunged his spear and withdrew the pole. The turtle swam awhile
[411] until exhausted, and then he was drawn alongside, his head pounded with an ironwood club, and then he was turned on his back and drawn on board. This called for great skill in balancing the cranky, smooth-bottomed boat to keep it from shipping a wave.

225 When a Seri goes in his native *balsa*, which only holds one man, he
501 straddles the middle part on his knees, resting them on seaweed. The craft is light and is a good sea craft, but it is low in the water and the man is wet all the time. He uses a double-bladed paddle, and his harpoon rests against pegs set in the *carrisos*. A rock which serves to quiet the turtle, two pointed stakes and a heavy fish line complete the equipment. He has to paddle across to the other side in that cramped position, say eight or ten miles, very early in the morning, then watch his chance to harpoon. If successful he brings up the turtle, knocks him on the head with the rock, pulls him on the end of the craft by skillful manipulation, cut slots in the front flippers, put stakes through and into the *carriso*, pinning him firmly in place, then paddle back.

225 The wind came up strong when we started to return from our turtle
123 hunt and with wind and tide against us we rowed across the Island. Bob and his brother disembarked and took it afoot for camp, a distance of ten miles, reaching there at two p.m. The Seris made a tump line and towed the boat, one towing and two warping off-shore until we arrived at camp about four p.m.

When the bow was run up on the shore everybody came down, the women and children talking a steady stream in their strange jargon.
123 They soon jerked the heavy turtle out, dragged him up the beach on
262 his back, and began immediately to cut him up. Bob spoke for the breast, which is a white plate on the underside of the turtle with

[text continues on p. 168]

123 the flesh attached. This we roasted, or broiled, by standing it on
262 edge against two stakes in front of the fire. The breast was white and tender, somewhat like roast pig, but much more delicious.

262 The Seris cut off the great flippers, dug out the entrails, and
252 whenever there was a crack in the crowd of men, women and children, there was a dog lapping the blood and chewing a shred of meat before being driven off. Men, women and children tore off pieces of the tender
[251] meat and ate it raw. The blood which gathered in the hollow of the shell was baled out and saved in an olla.

A woman took out the coils of entrails, ripped them open with her finger, squeezed out the half-digested sea grass, which resembled closely-packed boiled greens, and rinsed them in the sea. The head
[251] was skillfully disjointed, and with flippers, entrails and liver, put up on the brush roof away from the sand and dogs.

Then began the feast; half the turtle being devoured immediately.
[264] To see Blanco, which name fits neither his complexion or character, gnaw the bone and tear away the raw flesh of a turtle flipper with his strong white teeth and cruel mouth, would not require much imagination to substitute the shin bone of a human being.

All parts of the sea turtle are utilized except the bones and portions of the head. The white, flexible under-shell is roasted and eaten, but how they can masticate and digest it is a mystery. I tried it and gave it up, as did all our party. It might have been a Goodyear tire, for all the impression we made on it, but even the Seri children
237 eat it. The carapace is broken into small pieces and dried out in an olla, and this yields a green oil. The shell is nearly one-half inch thick and filled with minute cells which carry oil. This oil is evidently a provision of nature to prevent barnacles and marine growths from attaching to the shell. This oil is poured into a previously cleaned section of intestine, fastened at one end, and then is bottled, ready for transportation or use.

The skin of the flippers is used for sandals. The broken pieces of carapace are also used for firing ollas. The shells are used for windbreaks, for receptacles for transporting household things on women's heads, and possibly for other needs. The stomachs are stretched, probably with sand, and when dried are used for transporting water, the same as we use a canteen.

185 The Seris are always improvident. They raise no cattle. They plant
261 nothing and the only crops they raise are children and dogs. They
[231] store no food away, eat when there is plenty, go hungry when there is
[234] nothing to eat. When they will eat raw turtle meat like animals, their
[262] taste is not refined. This is evidenced when they will eat a horse or burro dead, several days---scrape off the maggots to get a chance at it.

262 Burro meat comes first in their estimation, then mares, then steers, but they take what they can get and no questions asked. Burro deer or black tail is a great article of diet, and these deer are on the Island. Wolves and coyotes are on the Island also. I do not think they eat them.

266 As I have said, the Seris are reputed to be cannibals, or to have been. Since those who furnished the meals cannot speak, it is a matter not entirely proven.

648 197 There is a war on between Mexican fishermen and the Seris. The Seris are wild for boats and will do almost anything to get one, so two years ago a chance occurred and they killed seven drunken Mexican fishermen and seized their boat. Last summer, some fishermen surprised the Seris, killed one, and recovered the boat. They mourn this boat a lot more than they do the dead man.

648 Twenty or thirty years ago, Governor Ysabel came here with some troops to capture some Yaquis who had joined the Seris. The Governor told the Chief he would have to give up the Yaquis, as they were outlaws. The next day the Seris brought in six right hands. They said they had killed the Yaquis. Asked how and why, they said they had killed them while they slept and they wanted their guns. They cut off the right hand of each as proof.

With all their apparent friendship, we never go without arms. When we sleep our rifles are alongside of us, and we wear our revolvers with us. Sometimes we roll in with our clothes on. But they have never, by sign or act, shown anything but friendship.

851 123 197 A baby boy about four months old was in camp, so Rafael Ysabel baptized him and gave his name Rafael, and presented him with a little gold cross of which his mother was very proud. She held the baby while he poured a little precious fresh water over its head and repeated:

"In the name of the Father, Son and Holy Ghost, I name thee Rafael. . ."

123 Curious black eyes follow us always. When we eat, the Seris often squat around us and watch every mouthful. If there is any bread, gravy, grease, beans or meat left over, we pass it on and they certainly clean up.

While we eat, the waves are always lapping on the shore upon which many pretty shells are thrown by the tide, besides water-worn pumice stone in all sizes down to a small marble.

Our meals are very simple. We bake biscuit in the dutch oven for every meal, cook turtle meat, if we have it, or beans or rice or spuds.

[text continues on p. 171]

123 was black. He then ground it in the frying pan by rolling it with a tin can. When made, the coffee was black and bitter, but they were used to it that way.

At three thirty in the morning we were up from our sand beds and drank coffee. At four we pushed off, towing our *balsa* on which we lashed our turtle shells, antlers and other things. Our boat rode the waves like a duck.

As we glided by the foot of some mountains we could hear the surf break sullenly. We had the sail up but soon had to resort to the oars as the slight wind died out. Day soon began to grow light. The sea was glassy, reflecting the rosy morning tinge. There was a swell on but the waves were smooth.

136 The cormorants, in threes and fives, began flying to their feeding grounds with swift wings and necks outstretched. Then a few Pelicans drifted idly by on lazy wings. A school of sardines fretted the water near us, chased by a hungry fish from its depths. A few porpoises rose and dived, rose and dived, rose and dived, time after time. At one time eight of them came within twenty feet of us and one dived right under our bow, bouncing the boat up and down.

133 Soon we were passing some red volcanic hills, with caves and blow
123 holes in the cliff and sea caves below, in which the sea roared. Giant cactus secured a precarious footing in the crannies of the cliffs. Then a long beach, then *Cerro Prieto*, another red cliff descending to the sea, penetrated with numerous caves and roosting places for cormorants.

123 As we neared Alcatraz *(Pelican)* Island, we saw a fishing boat in the distance. The wind had freshened and was ahead and the waves seemed almost to come in board, but the hollowed tree arose and rarely shipped any water. A boat put off from the fishing boat and was rowed to shore, and as we came up we hailed the crew and grounded our own boat. They had seen us from Alcatraz Hill, and seeing the balsa thought the Seri Indians had stolen a fishing boat and were towing their own boat. Each man had a belt of cartridges and if the Seris had been there instead of us they were going to kill them. Bob knew them from Guaymas.

We pushed off from shore again, and after rowing a half or three quarters of a mile further we beached our boats, cooked dinner and waited for our auto truck. Our provisions were almost gone. We had only enough for one meal left. No meat at all. Water was almost gone. None other for miles.

415 One of the cherished vessels used by the Seris is an agate chamber
264 pot. It is black from much use. When I saw it, it contained a green
• 262 slimy mess made from meal of seaweed seeds and the green fat or oil of the turtle. The Seris stick their fingers into the pot and then lick them off. If any is left the dog licks out the pot. No vessel is ever washed; it is licked clean.

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223
826 so all the other flies could see and also come to this dead thing.''

787 A few weeks ago, Antonio Herrera had a very vivid dream. He dreamed
[78] that he was hunting in the mountains for deer and came across a cave. (These volcanic mountains are pitted with caves.) He went into the cave and saw all kinds of things dear to the heart of a Seri---plenty of rifles, lots of cartridges, knives, *manta* (unbleached cotton), necklaces, red bandannas, blue overalls, *plata*, or silver, and many other things.

[85] When he awoke he sought his father Manuel Encinas, who is a medicine man and interpreter of dreams, to explain his dream to him. The price demanded by Manuel was six *tiras*---or 30-30 cartridges, a very high price, according to Seri standard. The explanation was this:

It was true that the cave was there and all the things in it just as seen and described by Antonio, but in order to find it he would have to fast nine days and go without water that length of time also, in the heat of summer. Then the way would appear to reach the cave. So far, Antonio has not attempted the fast.

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396 I witnessed the operation of making a certain kind of pitch or tar which the Seris use to make the seams in their canoes or boats tight. The women pound up the dried pulp next to the outside skin of a dead *pitahalla* cactus (organ cactus). This is very dry and brown in color and the pieces are pounded up to a dry powder with a wash or shore rock in a dried deer hide. This is placed in a *batello*, or flat basket, and manipulated so that the coarse pieces come to the top and are scraped off and thrown away. The fine powder is then put in a five gallon can and some porpoise or sea-lion oil or horse oil is poured on it and stirred into a thick gummy mass. When thoroughly mixed it is put over the fire, in an olla, to boil and continually stirred for an hour or two until it is the consistency and has the appearance of coal tar. While being worked it is kept heated and applied to seams inside and outside the boat. It hardens just like tar and answers the same purpose.

123 Since the corn, which had kept this band of Seris in food, disap-
226 peared two days before we came, and they had barely kept going on
[88] seeds and a few fish, and they all had decided to leave camp with us in the morning---the women walking and the men and some children in boats---it was necessary to supply them with some food to take them to the hunting grounds of the *cahuama*, or sea turtles, and land them
• [262] on the Island. The *cahuama* would furnish them meat---their favorite and national food, and the shores would supply them with clams, oysters, crabs and other sea food.

123 So the whole band was called around our camp and each family was furnished with two cups of corn, two of beans, some green coffee and a cup of cube sugar. For the first time our camp was free of Indians, and we ate and went to bed in peace.

The amenities of civilization were laid aside and forgotten in

123 Then Chico Romero and his load of children and dogs arrived and
484 he unloaded his impedimenta on the beach, and soon the women came walking along the beach and joined the party. The boats carrying the heavy things and children; the women, with their babies and a few light things on their heads, walk along the beach when possible and follow the boats, which hug the shore to avoid the strong currents and tide. The boats are propelled by paddles mostly, though some of the Indians use oars. The women are slightly built, slender and in-
501 clined to be gaunt, owing to the hard life and lack of food. Their
142 cheek bones are quite prominent and their profiles present protruding lips.

432 Having no permanent homes, moving hither and thither for their
[364] various food supply, household things are not accumulated and life is reduced to its very simplest elements and absolute necessities.

Crude baskets made from shoots of the torote tree, vessels in which to cook, and some patched rugs in place of Pelican skins to serve as blankets to the fortunate few, constitute the family pos-
231 sessions. Strange to relate, many of the women have an over-supply of
[858] milk, and according to Roberto have puppies nurse what the babies cannot take. One woman was known to nurse a baby pig on one side and a puppy on the other.

[247] Family dogs lick all cooking vessels which is unnecessary as they
[894] are thoroughly clean when the Seris are through with them, and also lick the infants clean after performing their natural functions, so they are quite indispensable. I saw a Seri girl place on the sand a small can of water for a dog and then saw her drink some of the remainder and pour the rest back in a five-gallon can. Dogs frequently swim across the Infernillo to join their masters.

732 Asked about cripples and incompetents, Roberto said they probably did not exist. The conditions of survival were too precarious to admit of anyone living who was unable, by physical disability, to hunt or fish. There are two or three men who are nearly blind or so. The wives of these men eke an uncertain living for them by the hardest
262 struggle. The sea turtle is the staple; one man and one good boat can
483 secure a living for five families. There are now nine boats, but one
501 boat to a family would practically free them from continual want.
262 With the exception of four bones in the flippers and the bones of the
237 head, all the sea turtle is used---the meat, blood, entrails, shell which furnishes food and oil, skin of flippers which furnishes sandals, sinew for strings. Nothing is wasted except contents of the entrails.

123 Again, we laid our blankets on the clean white sand of the shore and were lulled to rest by the murmuring sea.

123 Daylight found us up the next morning, and we breakfasted, rolled
484 up our blankets, pushed the boats into the sea and were off by the time the sun rose over the mountains and shone over a glassy sea. Two Seris towed their boat by a tump line, while a boy of twelve steered

123 223 [262] birds. As soon as the skin was off the breast was laid on top of the coals and roasted. The meat was red as raw beef, but it was free of fishy flavor and tasted excellent. The Indians ate pelican flesh till daylight.

252 [123] We gave them a generous helping of flour in a pail and this with water from a canteen, Santo stirred vigorously with a stick and then kneaded the dough with his hands until it was of the right consistency. He rolled hunks of this into little balls of dough about the size of golf balls, which he laid on his blanket. The boys picked these up, patted them flat like pancakes, scraped away ashes and sand from the edge of the fire, placed their pancakes in the hollow, covered them with hot ashes and hot sand, and in about three minutes pulled them out all baked brown. They shook the ashes and sand from them, leaving them clean and ready to eat. I am telling this in detail to show how simple cooking can be done without a dutch-oven, frying pan, or cooking grease, far from civilization.

281 [123] We were soon paddled across to their village on the shores of Kino Bay and the skins turned over to Mrs. Santo. The skins had been split down the back, leaving the breast unmarred. The wings and legs had already been removed, and she sewed the skins together with sinew recovered from the birds. The boys had secured an extra pelican making six, three to a side, then placed together and sewed lengthwise, making a robe three and a half feet wide by seven feet long.

[342] [291] [301]

Pegging out and drying a Pelican skin robe by a Seri Indian woman - 1936

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Except for the occurrence of several battles, relations between Bands I and III were peaceful.

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Relations with non-Seri groups were not always peaceful. For many years the members of Band I were on friendly terms with the Papago; they often camped together and even intermarried. Due to a misunderstanding,[10] fighting erupted between the two groups and many people were killed in the years which followed.

BAND II

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[721]

The external relations of Band II were decidedly turbulent. Although their primary base of operations was a coastal area, the people did not use the ocean as a source of food. They preferred beef and horse meat which was easily acquired by stealing animals from ranches. Here again the wrath of the ranchers and the government was incurred.

[582]

A small group of Yaqui eventually joined Band II and intermarried with them. The Seri claim that the Yaqui induced the warriors of this band to assault travelers on the road between Hermosillo and Guaymas. Coyote Iguana, who according to Seri tradition captured Lola Casanova, was of this band. This activity soon brought retribution from the government. Later, dissension arose between these Seri and the Yaqui.

The enmity and strife that occurred between Bands II and V were mentioned above.

BAND III

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The history of the internal relations of this band on Tiburon Island seems to have been marked by periods of violence. Battles between subdivisions sometimes occurred; however, they were usually short-lived and soon forgotten. A major struggle once occurred when a shaman named *?apetla* "the invincible one" and warriors from subdivision 4 made repeated raids upon the neighboring subdivisions and killed many. Eventually, his enemies overcame their fear and destroyed the killer.

[721]

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Although the inhabitants of Band III were hunters, gatherers, and fishermen, they began to rob cattle once they became established on the mainland. They too incurred the wrath of ranchers and the government.

BAND IV

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Since the members of this band were, by choice, inhabiting an inland area of Tiburon Island, they lived in relative isolation as hunters and gatherers. Their primary contacts were with members of Band III with whom they intermarried.

[361]
[582]

BAND V

642 These people were apparently hunters, gatherers, and fishermen. It is said that they speared fish from the shore since they did not use balsas. They too apparently raided the ranches. Their warring nature has already been discussed; it resulted in the acquisition of few friends. However, several marriages between members of this band and members of subdivision 2 of Band III are said to have occurred.

BAND VI

The members of Band VI lived on San Esteban Island and were the most primitive of the tribe. They lived in huts made of driftwood and in caves and made extensive use of the balsa. Although they did not have the bow and arrow, they did become expert in the use of the spear. The people depended mainly on a seafood, iguana, and maguey diet.

621 628 578 Perhaps it was due to the confined living space on the small island with the accompanying lack of fresh water that relations between the four subdivisions were precarious and fights broke out frequently. The Seri today stress the fact that the members of this band were impetuous and unpredictable.

642 Their relations with the other bands were generally good however. Seri from Band III were free to visit San Esteban where they were well treated.

The San Esteban people seldom traveled to the mainland, and, since they spoke no Spanish, it is probable that they made no peaceful contact with non-Seri groups.

642 628 578 648 COLLAPSE OF THE BAND SYSTEM

Internal strife in the Seri tribe was probably a major factor in the establishment of the band system. External strife was a major factor in its downfall.

Reference has been made to the plundering, killings and rustling of cattle to which certain of the bands were dedicated. The concern of the Sonora government was aroused, and steps were taken to crush the rebellious groups. According to the present-day Seri, military action by army units and rancher outfits against the various bands resulted in the near-destruction of the whole tribe.[11]